

Two workers in full PPE (hard hats, face shields, respirators, and silver heat-reflective aprons) walking in an industrial setting. The worker on the left wears a grey helmet and the worker on the right wears an orange helmet. They are both wearing blue respirators and silver heat-reflective aprons over dark work clothes. The background is a blurred industrial facility.

SUSTAINABILITY in challenging times

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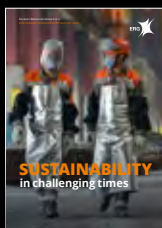
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COVER IMAGE

Employees at Kazakhstan Aluminium Smelter's aluminium electrolysis workshop.

ABOUT THIS REPORT

This annual Sustainable Development Report covers ERG's sustainability performance during the 2020 calendar year.¹ 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. 20). Its content has not been subject to third-party assurance. For all queries in relation to this report, please contact: sd.report@erg.net.

Please note that this report is produced in English, Kazakh and Russian. 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, please refer to the inside back cover of this document.

¹ This follows our last Sustainable Development Report, published in 2020 and covering the 2019 calendar year.

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 unlocking the potential of the Earth and its people, ensuring the prosperity of those who rely on us.

ABOUT ERG

With a global presence and a workforce of more than 67,000,² ERG owns integrated mining, processing, energy, logistics and marketing operations in Kazakhstan, Africa and Brazil.

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 Africa is the world's second largest producer of cobalt. In Africa, we are also a large producer of copper – with further development projects focused on coal, manganese, platinum, bauxite and fluorspar.

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

OUR VALUES



Safety



Unity



Efficiency



Development



Responsibility

FOR FURTHER DETAILS ON
OUR VALUES SEE P. 98

² Excluding contractors.

ERG at a glance

Meeting global demand for natural resources – and supporting the energy transition

KEY NUMBERS

\$2,023m

EBITDA
(2019: \$1,538m)

0.61

Lost time injury frequency rate (LTIFR)
(2019: 0.83)

\$4,611m

Economic value distributed
(2019: \$5,162m)

66,701

Headcount² – 25% of whom are women
(2019: 67,272)

KEY OPERATIONS¹

PRODUCTION REGIONS

Brazil
DRC
Kazakhstan
Zambia

DEVELOPMENT REGIONS

Mali
Mozambique
South Africa
Zimbabwe

KEY CUSTOMER MARKETS

China
European Union
Japan
Kazakhstan
Russia

CORPORATE OFFICES

Salvador

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

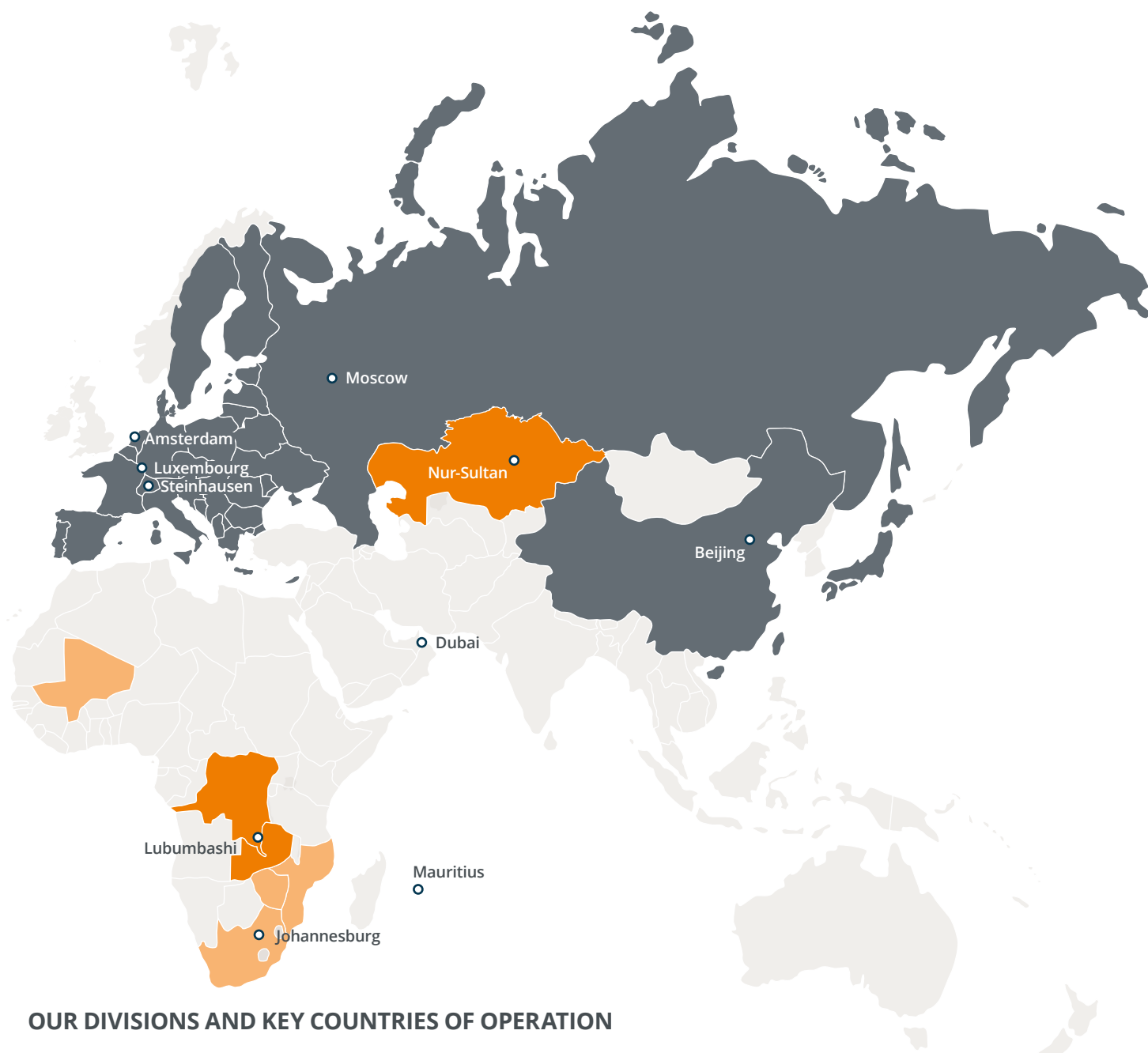
A diverse and long-standing global customer base

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


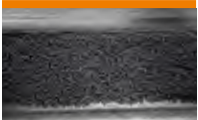




An enduring presence in Kazakhstan, with a global operational footprint

¹ Production/development regions as well as key customer markets are listed in alphabetical order.

² Excluding contractors.



OUR DIVISIONS AND KEY COUNTRIES OF OPERATION

					
FERROALLOYS	IRON ORE	ALUMINA AND ALUMINIUM	OTHER NON-FERROUS	ENERGY	LOGISTICS
\$1,623m Revenue	\$1,252m Revenue	\$756m Revenue	\$1,494m Revenue	\$510m Revenue	\$121m Revenue
\$662m EBITDA	\$433m EBITDA	\$248m EBITDA	\$584m EBITDA	\$172m EBITDA	\$44m EBITDA
KAZAKHSTAN	KAZAKHSTAN AND BRAZIL	KAZAKHSTAN	DRC AND ZAMBIA	KAZAKHSTAN	KAZAKHSTAN

CEO statement



During a year of unprecedented challenge, we maintained our focus on Sustainable Development and the future opportunities presented by the energy transition.

Prioritising our people and maintaining our performance

Our immediate priority in 2020 was to shield our employees and contractors, their families and the wider community from exposure to COVID-19. We implemented a comprehensive range of measures both inside and outside our operations to minimise the spread of the virus. Nonetheless, I am sad to report that 40 of our employees died from health complications relating to COVID-19 or pneumonia.

We also focused on improving our occupational health and safety management systems, which helped us reduce our employee lost time injury frequency rate to 0.61 (2019: 0.83). Despite such efforts, we experienced four workplace fatalities – involving three employees and one contractor (2019: 10 employees and one contractor). We have implemented corrective measures and will continue to focus on achieving Zero Harm.

My thoughts are with those affected by these tragic events.

Furthermore, I would like to extend my condolences to the family, friends and all those who worked closely with the Group's co-founder and member of the Board of Managers Mr Alijan Ibragimov, who passed away in early 2021. I would also like to welcome his son (and our former Head of Business Development) Mr Shukhrat Ibragimov to the Board of Managers.

Despite the exceptional challenges experienced during 2020, our business has proven both flexible and resilient. We were not only able to fulfil our production plans, but we also increased our revenue and EBITDA. In addition, I am pleased to report that we:

- Reached full Phase 1 production at Metallkol RTR in the DRC, cementing our status as a major player in the burgeoning cobalt market – and a key facilitator of the electric vehicle revolution
- Delivered record aluminium production in Kazakhstan and achieved a net increase in saleable ferroalloy production, reinforcing our position as the world's largest high-carbon ferrochrome producer by chrome content
- Started production at our BAMIN operation in Brazil, which will initially produce up to 1 million tonnes of ore per year. The high-grade, low-contaminant nature of the ore is expected to be particularly attractive to the Chinese market due to government efforts there to reduce the iron sector's carbon emissions and impact on local air quality

We continue to be guided by the Ten Principles of the UN Global Compact, to which we remain committed.

We also successfully bolstered our liquidity position by postponing non-critical capital projects (while focusing remaining capex on maintaining current production) and renegotiating our credit and debt arrangements. In 2020 we maintained:

- Our B2 credit rating from Moody's, albeit with a shift to a 'Negative' outlook, given price volatility and concerns around the COVID-19 outbreak. In 2021, our credit rating was upgraded to B1 with a 'Stable' outlook, driven by favourable global demand and prices

- Our B- credit rating from Standard & Poors with an improved 'Stable' outlook. This was further improved in 2021 to B- with a 'Positive' outlook, reflecting stable production and "surging" commodity prices

Our evolving Sustainable Development focus

Despite COVID-related disruption, we continued to integrate Sustainable Development into our business. This included the establishment of a dedicated Environmental, Social and Governance (ESG) Committee in the first half of 2021. The Committee will serve as the principal decision-making body in relation to our ESG policies and goals, provide in-depth analysis of our ESG projects and ensure accountability across our business. The Committee will play a fundamental, long-term role in helping us pursue continuous improvement – and respond to fast-evolving stakeholder expectations.

Our business is well placed to support, and benefit from, the global energy transition. Cobalt, copper and aluminium are expected to play a central role in supporting global decarbonisation – and we are proud of the increasingly strategic impact we are having in this regard. Similarly, ferroalloys are vital for the development of new gas, wind and nuclear power generation infrastructure.

We are conscious, however, that our downstream partners and end-consumers need to have confidence that our metals have been produced in a responsible way. Although our operations in Kazakhstan rely upon coal power generation, we are working to increase the proportion of energy we get from non-coal sources, including through the planned development of wind power generation capacity (p. 71). Given the energy context in Kazakhstan (which is highly reliant on coal generation as a country) and the fixed nature of our coal power generation assets there, this will be a gradual, ongoing process that takes place over time. Furthermore, we are focusing on broader efforts to reduce our carbon footprint through the application of our Energy Efficiency Programme (p. 71).

Importantly, in 2021 we initiated a formal process to establish 2030 renewable energy and GHG reduction targets. This reflects our belief in the need for joint climate action and will help us respond to both national emissions reduction targets and the planned adoption by the EU of a Carbon Border Adjustment Mechanism.

OUR VALUES



Safety



Unity



Efficiency



Development



Responsibility

FOR FURTHER DETAILS ON
OUR VALUES SEE P. 98



©Photo courtesy of the World Economic Forum.

Likewise, this need to demonstrate sustainable practices in the context of the energy transition is driving our ongoing efforts to achieve world-class assurance across the battery value chain. We do so via our Clean Cobalt Framework (p. 90), as well as the application of additional assurance frameworks – which, over time, we plan to supplement with blockchain-based, cross-value chain traceability platforms. This is particularly important given that Metalkol RTR is now the second largest cobalt-producing operation in the world.

Key steps in 2020

We are conscious of the important socio-economic role that we play in our mining towns – and wider society. In 2020, we continued to implement (in partnership with government at both national and regional level in Kazakhstan) a multi-year development programme in our regions of operation. This is informed by analysis of local needs, with a focus on living standards, youth skills, healthcare and sports.

In terms of our environmental impacts, the adoption of Kazakhstan's new Environmental Code in early 2021 further reinforced the importance of our existing efforts to improve our air quality performance. These efforts continued in 2020, with a focus on further reducing particulate emissions at Aksu Ferroalloys Plant, Aluminium of Kazakhstan and EEC.

Meanwhile, reprocessing and waste commercialisation is playing a growing role in our business – and our pursuit of 'circular economy' solutions. One of the most notable examples is Metalkol RTR in the DRC, which is reprocessing historical, third-party tailings. Similarly, we are planning to construct a new facility at Kazchrome to reprocess up to 1.7 million tonnes of chrome-bearing tailings a year.

In terms of our broader role in society, we distributed US\$4,611 million in value to our stakeholders (2019: US\$5,162 million) – ranging from our suppliers and contractors, to our host governments. As part of our efforts to further enhance our governance, we continued to shift towards a 'beyond compliance' approach that addresses business ethics in a broader sense (p. 84). This included the commissioning of an independent review of our Compliance Programme – and the adoption of related recommendations.

In terms of our growth, competitiveness and innovation, we:

- Completed Phase 2 construction at Metalkol RTR
- Advanced the implementation of 3D geomodelling in Kazakhstan (p. 24)
- Advanced our Smart Mine initiative, including at Aluminium of Kazakhstan
- Continued to implement our Group-wide Digital Strategy

As noted above, we also continued our efforts to deliver assurance around the cobalt we produce at Metalkol RTR, while improving local conditions and value chain transparency. This included the operationalisation of our Clean Cobalt Framework, as well as a commitment to undergo the Responsible Minerals Initiative's Responsible Minerals Assurance Process (RMAP). In 2020, we also co-launched a pilot of a solution – Re|Source – to trace responsibly produced cobalt from mine sites through to electric vehicles. In addition to these initiatives, we are driving change through the Global Battery Alliance, of which I am co-chair of the Supervisory Council.

Looking towards 2021 and beyond

The global consequences of COVID-19 are far from over. Post-pandemic stimulus packages – as well as ever-growing concern about climate change – are driving investment in green energy technology and infrastructure. ERG remains well positioned to help meet demand for the input materials that are required in this regard. And in doing so, we will help to deliver shared value and support modern life long into the future.

Benedikt Sobotka
Chief Executive Officer

Our business model

Creating value – now and into the future

INPUTS

FINANCE

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

PEOPLE

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

RELATIONSHIPS

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

NATURAL RESOURCES

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

CAPITAL ASSETS

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

INTEGRATED BUSINESS



Exploration and acquisition



Development



Mining



Sales



Smelting and metallurgy



Processing and beneficiation

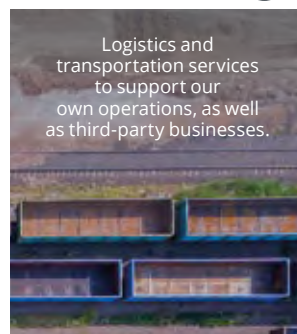


Post-mining reclamation



Energy

Generation of power for our operations and third parties in Kazakhstan.



Logistics

Logistics and transportation services to support our own operations, as well as third-party businesses.

Our values

SEE P. 98












Our strategy

SEE P. 10

Governance

SEE P. 96

Our integrated mining, metals, energy and transport business creates products that support the manufacturing, construction, infrastructure and logistics sectors – and which are facilitating the transition towards a green economy.

KEY PRODUCTS	KEY MARKETS	KEY OUTPUTS
 FERROALLOYS	China 	Social LTIFR 0.61 EMPLOYEE HEADCOUNT 66,701 ECONOMIC VALUE DISTRIBUTED \$4,611M
 COBALT	European Union 	Environmental CO ₂ EMISSIONS 24.3mt CO₂e ENERGY CONSUMPTION 270,197 TJ WATER WITHDRAWAL 1,910Mm³
 COPPER	Japan 	Financial UNDERLYING EBITDA \$2,023M REVENUE \$5,356M FREE CASH FLOW \$333M
 ALUMINIUM	Kazakhstan 	
 IRON ORE	Russia 	
 COAL		

External environment
SEE P. 16

Stakeholders
SEE P. 104

Risks
SEE P. 18

Material issues
SEE P. 20

Delivering shared value and supporting modern life...

Our business delivers value for our stakeholders, as well as products that not only support key aspects of modern life – but are in many cases actively contributing to the transition towards a more sustainable global economy.



...for our stakeholders

\$4,611M

ECONOMIC VALUE DISTRIBUTED

\$1,911M

PAYMENTS TO SUPPLIERS

\$802M

EMPLOYEE WAGES AND BENEFITS

\$683M

TAX EXPENSES

\$642M

PAYMENTS TO PROVIDERS OF CAPITAL

\$65M

COMMUNITY SOCIAL INVESTMENT

...and beyond

COBALT AND BATTERIES

The number of electric vehicles (EVs) on the road is predicted to rise from 10 million currently to 100 million by 2030 and 400 million after 2040 – and will account for 90% of battery demand over the next two decades.¹ ERG's responsibly sourced cobalt is playing a direct role in driving this revolution, while also helping satisfy rising global energy storage demand.

COPPER AND RENEWABLE ENERGY

Copper is not only a key input material for EVs (which require approximately four times the amount of copper compared to a conventional engine), but the metal is also vital for renewable energy systems. For example, the European Copper Institute notes that renewable energy systems use up to 12 times more copper than conventional systems – with copper demand expected to rise by more than 40% by 2035.² Furthermore, copper can be perpetually recycled, helping support the circular economy.

STEEL, FERROALLOYS AND THE ENERGY TRANSITION

Steel is integral to modern life, with 229kg produced per person per year on a global basis.³ In addition, the industry accounts for US\$2.9 trillion in total value-added contribution (supported or facilitated) – equivalent to 3.8% of global GDP.⁴ More specifically, ferroalloys are playing a material role in supporting the global energy transition, as they are vital for the development of new, lower-carbon gas and nuclear power generation infrastructure, as well as offshore and onshore wind power infrastructure.

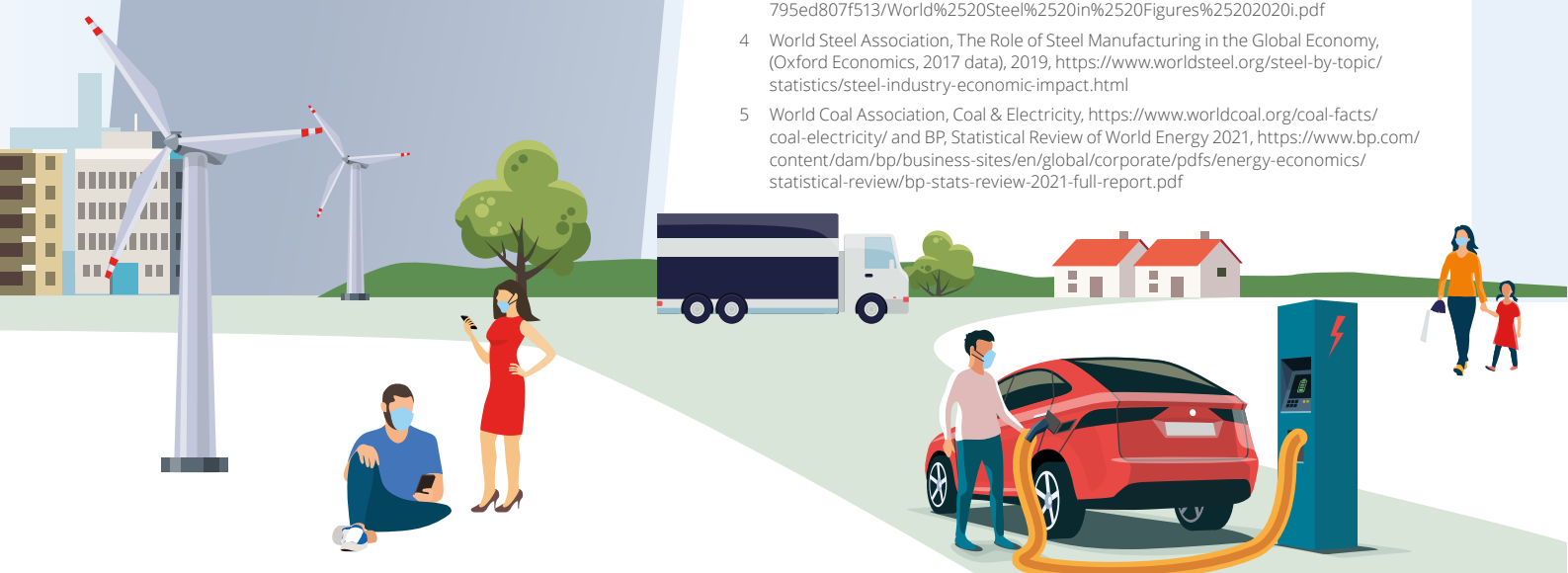
ALUMINIUM AND THE ENERGY TRANSITION

Aluminium is expected to play an important role in the global energy transition – helping reduce the weight of road vehicles (electric and conventional) and supporting wind generation, solar power and the development of lithium-ion batteries. It is also supporting urbanisation and, given its recyclability, the development of a more circular economy.

CURRENT GLOBAL RELIANCE ON COAL ENERGY

Coal is a significant contributor to global carbon emissions, yet it accounts for more than a third of global electricity generation and is expected to remain a key global power source for some time.⁵ As such, it currently plays an important role in delivering development and economic growth to a significant proportion of the world population, including in Kazakhstan. In this context, we are working to increase the proportion of energy we get from non-coal sources, developing our renewable energy portfolio and exploring how to further reduce the footprint of our products.

- 1 Wood Mackenzie, Future energy – How Electric Vehicles Transform Battery Demand, 19 February 2021, <https://www.woodmac.com/news/the-edge/future-energy-how-evs-transform-battery-demand/>
- 2 European Copper Institute, Copper and the Circular Economy, <https://copperalliance.eu/benefits-of-copper/circular-economy/>; and (2) Copper Alliance, Copper: An Essential Resource, <https://copperalliance.org/about-copper/the-copper-industry/>
- 3 World Steel Association, Apparent steel use per capita (finished steel products) (2019 data), <https://www.worldsteel.org/en/dam/jcr:f7982217-cfde-4fdc-8ba0-795ed807f513/World%2520Steel%2520in%2520Figures%25202020i.pdf>
- 4 World Steel Association, The Role of Steel Manufacturing in the Global Economy, (Oxford Economics, 2017 data), 2019, <https://www.worldsteel.org/steel-by-topic/statistics/steel-industry-economic-impact.html>
- 5 World Coal Association, Coal & Electricity, <https://www.worldcoal.org/coal-facts/coal-electricity/> and BP, Statistical Review of World Energy 2021, <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2021-full-report.pdf>



Our strategy

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 is best demonstrated by our 2025 Strategy, which is ultimately aimed at achieving 'business sustainability'.

Furthermore, we are a participant in the UN Global Compact, support the aims of the United Nations Sustainable Development Goals (SDGs), and seek to maximise our positive impacts and minimise any negative impacts in this regard.

This includes the identification of relevant SDGs for ERG,¹ selected on the basis of:

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

¹ Please 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

A happy and professional team

Development of our employees' competencies and the maintenance of their safety and well-being

Sustainable development of our host regions

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

Efficiency in all that we do

A strong focus on pursuing efficiency across the Group

Financial stability

The maintenance of financial resilience, whilst delivering sustainable shareholder returns

Sustainable development principles



Zero harm



Leadership



Accountability



Balance



Integrity



Innovation

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 business

- Deliver safe working conditions
- Improve employee health and well-being
- Deliver comfortable workplaces
- Develop strategic skills and competencies

- Improve employee benefits
- Improve ERG's employee proposition and status as an employer
- Further develop our corporate culture
- Develop our talent pool and leadership pipeline

- 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 – to support local well-being in our regions of operation
- Support entrepreneurship and the development of the business environment in our host countries

- 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

- 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

KEY STAKEHOLDERS

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

- Employees
- Host governments
- Regulators
- Local communities

- Local communities
- Regulators
- Regional governments
- Civil society

- Shareholders
- Customers

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

Business performance

OPERATIONAL PERFORMANCE

Despite a year that presented significant operational disruption risks, we managed to fulfil all our production plans. This is testament to the measures taken to avoid and/or mitigate the impacts of the COVID-19 pandemic, the efforts of our people and the resilience of our business (p. 14).

Despite global uncertainty, our production performance helped us materially increase our revenue and underlying EBITDA (see below). Amongst other things, this reflected increased production at Metalkol RTR (p. 25), as well as increased output at Frontier (p. 26). Indeed, Metalkol RTR became the world's second largest producer of cobalt – confirming our role as a key player in the electric vehicle revolution.

Strong iron ore prices also helped to boost EBITDA in Kazakhstan. In this context, we increased sales volumes of iron ore to China by 95.7% to 4.5mt in 2020. In addition, we initiated commercial iron ore production at our BAMIN iron ore operation in Brazil (as a precursor to its full potential development).

In addition, we achieved record aluminium production of 265kt in Kazakhstan (2019: 263kt) and broadly maintained our ferroalloy and iron ore production.

In the meantime, ERG continued to represent one third of the metals and mining industry in Kazakhstan and we maintained our position as the world leader in high-carbon ferrochrome production by chrome content.

265kt

RECORD ALUMINIUM PRODUCTION

+37.0%

SALEABLE COPPER METAL PRODUCTION

+146.3%

SALEABLE COBALT HYDROXIDE PRODUCTION

Key 2020 production dynamics

Division	Product	2020	2019	Change	Associated dynamics
Ferroalloys	Ferroalloys	1,653kt (net)	1,639kt (net)	1%	<ul style="list-style-type: none"> Ferroalloys experienced a weak price environment due to sluggish stainless steel demand and higher global inventories, amongst other factors
Iron ore	Saleable iron ore concentrate and pellets	13,114kt	13,195kt	(1)%	<ul style="list-style-type: none"> After starting the year at around US\$90 per tonne, iron ore prices were very strong in 2020, almost doubling towards year-end – and averaging US\$109 per tonne (+17% on 2019 prices) Drivers included COVID-19-related supply cuts in South Africa and South America – plus an early Chinese economic recovery
Alumina and Aluminium	Alumina	1,383kt	1,393kt	(1)%	<ul style="list-style-type: none"> ERG Aluminium production reached a record high of 265kt (2019: 263kt) – reflecting technological improvements Aluminium prices were volatile, with average prices lower than in 2019 – driven by oversupply and falls in demand prompted by the pandemic
	Aluminium	265kt	263kt	1%	
Other non-ferrous	Saleable copper metal	80kt	59kt	37%	<ul style="list-style-type: none"> Frontier achieved strong production results, driving higher volumes of saleable copper concentrate Copper prices reached a multi-year high, rising by 26% during 2020 Metalkol RTR reached full Phase 1 production and completed construction of Phase 2 of the plant in Q2 While the average 2020 price for cobalt was down by 6% compared to 2019, it rebounded towards the end of the year to finish 1.5% lower than it started
	Saleable copper concentrate	103kt	83kt	25%	
	Cobalt metal	0.1kt	1.5kt	(93)%	
	Saleable cobalt hydroxide	17kt	7kt	146.3%	
Energy	Coal	28,871kt	27,503kt	5%	<ul style="list-style-type: none"> Higher coal production was driven by additional orders from customers who previously purchased from the non-ERG Bogatyr Komir mine (which experienced a temporary decrease in capacity) Thermal coal prices were significantly lower, however, due to pandemic-related restrictions and the broader economic impacts of COVID-19 in Europe, Australia and Asia Third-party sales of electricity fell by 3% from 1,892 GWh to 1,838 GWh
	Electricity	14,793 GWh	14,460 GWh	2%	
Logistics	Logistics	53,076kt transported	53,836kt transported	(1)%	<ul style="list-style-type: none"> Third-party freight forwarding volumes fell by 15% Sales volumes of iron ore to China grew by 96% from 2.3mt in 2019 to 4.5mt

FINANCIAL RESILIENCE

Financial performance

In 2020, our underlying EBITDA increased by 31.5% to US\$2,023 million (2019: US\$1,538 million). In turn, this reflected higher revenues of US\$5,356 million (2019: US\$4,872 million). Meanwhile, operating expenses were US\$141 million lower compared to 2019, reflecting the impact of:

- Our business optimisation activities
- Deferrals of non-critical spending driven by COVID-19
- Lower input prices

We also reduced our capex significantly to US\$572 million (2019: US\$869 million). This reflected the postponement of non-critical projects to help support Group liquidity, as well as the completion of construction of Phase 1 of Metalkol RTR in 2019. Remaining capex was focused on sustaining our existing production volumes and on reducing the future cost profile of our existing assets.

In this context, our net cash generation from our operating activities increased by 61.3% to US\$905 million (2019: US\$561 million).

OUR RESPONSE TO COVID-19

Ensuring operational continuity

In 2020, in addition to ensuring the health and safety of our employees and communities (p. 14), we took a multi-layered approach to minimise any disruption to our operations from COVID-19 – whether this resulted from our own safety measures, or as a result of broader value chain disruption. As a result, our operations were not materially impacted.

For further details, please see p. 15.

Ensuring our immediate financial resilience

The COVID-19 outbreak had the potential to pose serious financial risks to our business. As a result, we took a number of steps to bolster our immediate liquidity position.

For further details, please see p. 15.

Maintenance of sustainable liquidity and debt

In addition to the immediate steps we took to maintain our liquidity position in the face of COVID-19, we implemented a number of more structural measures to support our medium-term financial resilience. These are described below.

Debt restructuring

We improved our debt position and consequently our overall liquidity profile by agreeing:

- To revise repayment schedules under certain existing loan agreements with, among others, VTB Bank (PJSC) and Sberbank of Russia
- Lower interest rates for our debt with both banks (our overall cost of debt has been reduced by more than 0.8% per year)
- To extend the maturity period with respect to our debt with, among others, VTB Bank (PJSC) until 2030

New financing

During the year, we signed:

- An amendment to our existing loan agreement with, among others, VTB Bank (PJSC) to receive an additional tranche of up to US\$350 million and improve selected commercial terms. At year-end, we had US\$250 million still available to us
- A similar amendment to the existing prepayment facility we maintain with an affiliate of VTB Bank (PJSC), which provided ERG with additional tranches of up to US\$250 million. At year-end, we had up to US\$100 million still available to us

The availability of these undrawn funds has significantly enhanced our liquidity position – as well as our ability to implement high-priority maintenance and growth projects if required.

+9.9%

REVENUE

+31.5%

UNDERLYING EBITDA

-34.2%

CAPEX

Maintenance (and improvement) of our credit ratings

In early 2020, we maintained our B2 rating from Moody's, albeit with the outlook shifting from 'Stable' to 'Negative' – reflecting low commodity prices (at the time) and concerns over the economic impacts of the COVID-19 outbreak. In 2021, this was upgraded to B1 with a 'Stable' outlook. This reflected anticipated growth in our EBITDA and planned debt repayments, in a context of strong global demand and prices for commodities.

In 2020, Standard & Poor's affirmed ERG's B- rating but improved the outlook to 'Stable'. This partially reflected more favourable commodity prices, as well as the impact of commercial production at Metalkol RTR. In 2021, this was further improved to B- with a 'Positive' outlook, reflecting projections of increased EBITDA based on stable production and rising commodity prices and, as a result, improved financial stability to meet financial obligations.

Our response to COVID-19

In 2020, we had to navigate the considerable uncertainty posed by the COVID-19 pandemic, in terms of our people, our operations and our financial resilience. Our immediate response was coordinated through our specially established Anti-Crisis Control Centre, with the support of a range of our internal functions.

SUPPORTING LOCAL EFFORTS TO ADDRESS COVID-19

In 2020, we implemented a range of measures across our global operations to support local communities (and beyond) in responding to the pandemic. This included:

Kazakhstan

- A donation of more than US\$10 million for the creation of a national foundation focused on addressing the socio-economic impacts of the pandemic. This helped to provide financial and healthcare support for disadvantaged and socially vulnerable groups across the country. In addition, we contributed US\$230,000 to support the fight against the virus in Nur-Sultan.

PROTECTING OUR PEOPLE

Our coordinated response to secure the health and well-being of our workforce was informed by direct engagement with leading medical specialists from Kazakhstan, Russia and Germany.

Key measures across the Group included:

Prevention

- Employee awareness raising and the provision of personal protective equipment and hand sanitisers
- Flu and pneumonia vaccinations for employees in Kazakhstan to prevent double infections – as well as annual flu vaccinations for all employees in Brazil.

In addition, in 2021 we offered our employees in Kazakhstan COVID-19 vaccinations at the sites as well as the corporate office in Nur-Sultan.

- The disinfecting of our facilities and vehicles, as well as the installation of air recirculators in crowded locations
- The use of thermal scanners and touch-free thermometers at checkpoints, on buses and at our offices
- Social distancing in the workplace and the use of additional buses to safely transport employees
- Remote working and amended shift patterns to minimise human contact

- The implementation of COVID-safe traffic management plans for truck drivers in Africa
- Door-to-door engagement with employees' immediate families at Metalkol RTR focused on hygiene and protection against COVID-19 – as well as the provision of reusable face masks and hand sanitisers, and voluntary testing where requested

Testing and consultation

- The provision of Group-wide PCR¹ diagnostic testing, with around 69,000 tests administered in 2020
- The implementation of a Group-wide antibody testing programme, with around 14,000 employees tested in 2020
- The opening of a new ERG testing laboratory in Nur-Sultan, Kazakhstan
- The provision of remote medical consultations for employees

In addition, we deliver general healthcare to our employees, via:

- Our newly acquired medical centre (p. 38) and its regional clinics in Kazakhstan
- Local clinics in Africa (both internal and external)
- Health insurance plans in Brazil

For more information, see p. 38.



1 Polymerase chain reaction.

We also invested over US\$4 million through our regional memoranda of understanding (Regional MoUs) with local governments to help support the public health response to COVID-19 in our operating regions. Further information on these initiatives is provided on page 57.

Africa

- Support for a Good Shepherd International Foundation initiative that provided 16,200 reusable face masks to local communities (including the families of employees) near Metalkol RTR in the DRC (p. 61)
- The donation of materials to the Community Development Committees (CDC) of the Lenge and Kisankala communities near Comide to support the production of reusable face masks – helping create additional income for local women

- The donation of large capacity water tanks (and chlorine) to support hand sanitisation in the town of Kolwezi and other communities near Metalkol RTR
- Donations of medical equipment (including respirators and thermometers) to local government bodies
- The option for community members near Boss Mining to receive treatment at the operation's clinic should they be infected with COVID-19 – with the potential to be transferred to a state hospital in severe cases
- Extensive COVID-19 awareness raising activities for local communities near some of our operations

Brazil

- A donation of US\$54,000 to our local municipalities, including for food and hygiene baskets, more than 300,000 gloves and hand sanitiser gel
- The donation of more than 20,000 face masks to local communities
- The donation (in early 2021) of 32 pulmonary ventilators to equip health units in Bahia

ENSURING OPERATIONAL CONTINUITY

Our comprehensive approach to ensuring operational continuity meant our operations were not materially impacted by the outbreak. Key measures included:

Maintenance of production

Our operational continuity plan aimed to ensure at least three months of uninterrupted production in the event of a significant decrease in personnel availability. Key actions included:

- The transition to a 12-hour shift system
- The creation of 'quick response' teams to address operational gaps
- The postponement of non-urgent maintenance, repair and stripping activity

In addition, we implemented emergency succession planning and created an operational 'reserve' using repair personnel.

Sales planning

We carried out scenario analysis to understand and manage the threat posed to our sales. This included:

- Benchmarking and stress-testing
- The identification of key triggers likely to affect sales
- The confirmation of planned sales volumes with key customers
- Contingency planning

Supply chain continuity

We took action to maintain adequate supplies of raw materials, goods, materials and equipment, including:

- The maintenance of optimal levels of critical inventory items
- The confirmation of planned deliveries with suppliers (and the identification of alternatives if/where necessary)
- Analysis of potential logistical constraints and alternative arrangements

Execution of capital projects

We analysed the impact of the outbreak on equipment delivery and contractor availability – and developed plans to reduce any project implementation backlogs. This included the application of remote working by project contractors and the use of alternative local contractors.

ENSURING OUR IMMEDIATE FINANCIAL RESILIENCE

In early 2020, the COVID-19 outbreak had the potential to pose a short-term threat to our financial stability – in terms of commodity prices as well as commercial and logistical disruption.

In addition to more 'structural' measures focused on debt restructuring and new financing (p. 13), we took steps to bolster our immediate liquidity position.

These included:

- Working capital management
- Cost optimisation
- Capex optimisation, including focused spending on maintaining our existing production profile

External environment

Understanding and navigating global challenges and opportunities in 2020

GLOBAL COMMODITIES MARKET TRENDS – AND THE IMPACT OF COVID-19

Global commodity prices saw exceptional volatility in 2020. COVID-19 had a material impact in the first half of the year, as lockdown measures exerted downward pressure on prices.

The economic recovery in China, as well as broader government stimulus packages, helped prices for many commodities return to pre-pandemic levels in the second half of 2020. Indeed, iron ore and copper prices reached multi-year highs, prompted by increased demand in China, mine closures and supply cuts. Cobalt remained relatively stable, supported by green stimulus packages and electric vehicle sales. While aluminium saw a drop in prices in 2020, they partially recovered towards the end of the year – reaching approximately US\$2,000 per tonne.

Nonetheless, ferroalloys and thermal coal prices remained weak throughout 2020. In the former case, this was due to a saturated supply chain and high inventories. In the latter case, this reflected reduced economic activity driven by pandemic-related restrictions.

In 2021, there was continued, broad price resurgence across a range of metals, including aluminium, cobalt, copper, iron ore and steel, as well as coal. This was driven by global economic recovery, government stimulus packages and growing global focus on the energy transition.

GLOBAL DECARBONISATION – AND OPPORTUNITIES FOR 'TRANSITION METALS'

Climate change is the most pressing challenge of the modern era, and there is widespread consensus around the importance of decarbonising the global economy. This 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. Indeed, in May 2021, the government strengthened its interim 2030 target of achieving a 10% share of renewable energy in national power generation capacity, to a 15% share.

In this context, the metals and mining sector faces increasing stakeholder pressure – including from investors, finance providers, customers and governments – with respect to its carbon footprint. This includes, for example, the imposition of the EU's planned Carbon Border Adjustment Mechanism (sometimes referred to as a 'carbon border tax').

At the same time, decarbonisation also presents potential growth opportunities for ERG and the sector more broadly.

Implications and responses:

Pursuing business sustainability and ensuring financial resilience

Volatile market conditions in 2020 underline the importance of ensuring our resilience and preparing our business for the future. Our efforts in this respect included:

- The implementation of a range of urgent, impactful measures to ensure the safety of our workforce and the continuity of our business – as well as to bolster our liquidity – in response to COVID-19 (p. 14)
- The ongoing embedding of our 2025 Strategy and supporting functional strategies (p. 10)
- Sustained organisational transformation, through our ERG Way Production System, the ERG Academy and a range of functional reinvention programmes (p. 32)
- The ramping up of production at both Metalkol RTR and Frontier, which helped to boost EBITDA
- An enhanced approach towards portfolio growth and asset maintenance, including through our ERG Capital Projects entity, Efficient Mine project and newly established ERG Exploration entity in Kazakhstan (p. 24)

Meanwhile, in 2021 we remained well-positioned to benefit from what some are heralding as a new mining and metals 'super-cycle'.

Implications and responses:

Enabling the global energy transition, while working to reduce our carbon footprint

ERG is committed to playing its part in addressing this challenge. This includes our role in delivering the metals – such as cobalt, copper and aluminium – that will help enable the global transition to a lower carbon economy. In particular, Metalkol RTR – which is now the second largest cobalt-producing operation in the world – is set to help meet growing global cobalt demand and place ERG at the centre of the electric vehicle revolution. Similarly, ferroalloys are playing a key role in the development of new gas, wind and nuclear power generation infrastructure. In this context, ERG is well placed as the world leader in high-carbon ferrochrome production by chrome content.

We also recognise the importance of reducing our greenhouse gas (GHG) emissions and improving our energy efficiency – particularly in Kazakhstan. In 2020, our efforts included:

- **Energy efficiency:** The ongoing application of our 2016-2020 Energy Efficiency Programme, which saved us 284 terajoules over the course of 2020 (p. 71)
- **Renewable energy:** Advancement of our wind generation project, with plans to establish generation capacity of about 150MW. We have transitioned two potential generation sites in the Aktobe and Pavlodar regions to feasibility stage (p. 71)

In addition, we are working to increase the proportion of energy we get from non-coal sources in Kazakhstan.

RISE OF STAKEHOLDER INTEREST IN ESG

In recent years, external stakeholder scrutiny of companies' environmental, social and governance (ESG) performance has continued to grow. This has manifested in different ways, including the integration of ESG considerations into banks' lending decisions and/or terms, heightened interest from civil society, and hardening regulation being applied by governments and international organisations.

This is particularly relevant to the mining and metals sector because of the impactful nature of its activities, the role that it can play in driving broader economic development, its high levels of interaction with host governments and the often vulnerable and/or 'high-risk' nature of its operating environments.

Should we fail to meet these rising expectations, it could have material consequences in terms of reduced access to finance, loss of social licence to operate, reputational harm and/or legal sanction.

DEMAND FOR GREATER MINERAL VALUE CHAIN TRANSPARENCY AND ASSURANCE

Growing demand for upstream mineral value chain transparency and assurance is being driven by both downstream participants and (in certain cases) regulators. Current focus is particularly strong with respect to cobalt and its role in the burgeoning global battery supply chain. More broadly, it is also reflected in the London Metals Exchange's (LME) 2019 responsible sourcing requirements.

In part, this reflects the fact that more than half of global cobalt reserves are located in the DRC, which accounts for around two thirds of global production. DRC represents a higher-risk operating environment, with concern amongst a range of stakeholders regarding the conditions in which extraction, processing and trading takes place – particularly where such activity is linked to illegal and/or irresponsible activity.

Similarly, there is growing awareness of the need to address the severe development challenges faced by artisanal and small-scale mining (ASM) communities in the country.

There is also growing downstream demand for increased transparency around the cross-lifecycle carbon footprint of metal products.

Implications and responses:

Continued evolution of our ESG approach

Building on the work we have carried out to improve our Sustainable Development performance, in the first half of 2021 we established a dedicated, Group-level ESG Committee (p. 32). This will guide our efforts to improve Group-level ESG performance over the coming years.

Importantly, we are continuing to evolve our approach towards climate change – the highest priority issue for many investors, finance providers and regulators. It is clear that growing stakeholder pressure in this regard presents a range of emerging risks and opportunities. As noted above, this includes opportunities around our production of 'transition metals' such as cobalt, copper and aluminium, as well as the ferroalloys needed to help support the development of new, lower-carbon power generation capacity.

In addition, we are working constructively with a key finance provider as it seeks to apply ESG criteria to its lending practices. In the first half of 2021, we signed a Memorandum of Intent to work with SberCIB (a subsidiary of Sberbank) to develop ESG standards – including green financing instruments and related targets/metrics – for the metals and mining industry. It is hoped that this will further support our ability to pursue innovative, ESG-aligned projects in our regions.

Implications and responses:

The Clean Cobalt Framework and the promotion of cross-value chain standards

Our Clean Cobalt Framework (p. 90) seeks to: (1) deliver high levels of responsible cobalt value chain assurance; and (2) improve living conditions for local communities near our Metalkol RTR operation. The Framework ensures that no cobalt is sourced from ASM, while acknowledging the role played by ASM in supporting local livelihoods. It also ensures that Metalkol RTR conforms with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (OECD Due Diligence Guidance).

We produced our Inaugural Clean Cobalt Performance Report in 2019, which was independently assured by PwC. This confirmed that Metalkol RTR had established and implemented systems and procedures aligned with the Clean Cobalt Framework and that it conforms with the OECD Guidance. We plan to produce our second, independent Clean Cobalt Performance Report in 2021 (subject to COVID-related restrictions).

We also apply the Cobalt Industry Responsible Assessment Framework (CIRAF), which is focused on managing risks around, and reporting on, the responsible sourcing and production of cobalt (p. 93). This follows our first risk assessment carried out in 2019.

We are in the process of further strengthening transparency and assurance around the cobalt that we produce. This includes:

- The planned application of the Responsible Minerals Initiative (RMI) Responsible Minerals Assurance Process (RMAP) at Metalkol RTR in 2021 (p. 92)
- Work with partners including the Global Battery Alliance, the World Economic Forum, UNICEF and sector actors, to develop responsible standards, promote transparency across the battery value chain and effect positive on-the-ground change (p. 92)
- Work with the Mining and Metals Blockchain Initiative and the Re[Source] consortium to develop blockchain-based, cross-value chain traceability and assurance systems (p. 92)

Furthermore, we are starting to apply similar principles to other product lines such as aluminium. This includes the establishment of relevant management systems to help us meet the LME's responsible sourcing requirements (p. 89).

Risk management

Managing potential threats to our business sustainability

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

In 2020, we continued to advance our risk management practices through the application of new methodologies and information systems. For further details, please see p. 97 in the Appendix.

ERG's principal risks are set out in the table below. Please note that there may be additional risks yet unknown to the Group and other risks currently not believed to be material, which could have an impact on our business performance and financial results.

Principal risks and mitigation actions

Risk area and description	Selected mitigation actions
Political risks 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.	<ul style="list-style-type: none"> • Monitoring and analysis of political and macro-economic trends in our regions of operation
Regulatory and legal risks There are a number of factors that could affect our regulatory context. This includes the introduction of new (or changes to existing) laws and regulations by our host governments.	<ul style="list-style-type: none"> • Monitoring of potential legislative and regulatory changes • Representation of our interests through professional bodies/associations • Monitoring of compliance with our licence and permit obligations
Price risks A substantial decline in – or volatility around – commodity prices could materially affect our business, including our financial results and our liquidity.	<ul style="list-style-type: none"> • Maintenance of long-term sales contracts that link commodity prices to benchmarks • Hedging of commodity prices • Development of alternative sales channels
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.	<ul style="list-style-type: none"> • 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
Supply chain and logistics risks The Group's large supply chain exposes it to risks relating to contractual non-compliance by suppliers, including non-delivery; changes in prices for purchased goods; and shortage of transportation for goods.	<ul style="list-style-type: none"> • Creation and maintenance of supplementary stocks of critical items (including PPE) • Quality/specification/completeness controls related to the supply of goods and services • Long-term contracts and category strategies for key goods/services (including formula pricing) • Maintenance of our own fleet of railway wagons
Capital project execution risks 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.	<ul style="list-style-type: none"> • Systematic, transparent and stage-gated project implementation process • Enhanced project due diligence, including independent project reviews • Contingency planning based on schedule and budget risk analysis • Monitoring/control of project deadlines, budgets and ramp-up, etc.

Risk area and description	Selected mitigation actions
<p>Financial risks</p> <p>Our ability to carry out necessary operational and investment activities could potentially be undermined by credit risks, liquidity risks, foreign exchange risks and interest rate risks, as well as risks relating to the inability of the Group to access commercially viable external financing.</p>	<ul style="list-style-type: none"> • Maintenance of strong relationships with existing lenders, the expansion of our credit lines, as well as improvements to our debt portfolio, funding opportunities and conditions • Regular updating of our cash flow plan and control of the Group's liquidity level • Compliance with covenants • Monitoring of the Group's open FX position • Monitoring of tax legislation compliance • Credit control process implementation, including the setting of credit limits and alignment control
<p>Personnel management risks</p> <p>The fact we operate in remote locations poses risks in terms of our ability to attract personnel with the skills and experience we need, as well as the outflow of qualified personnel.</p>	<ul style="list-style-type: none"> • Maintenance of competitive remuneration packages • Training and development to maintain the skills pipeline • Implementation of an effective incentivisation and retention system • Implementation of social support programmes for personnel
<p>Social risks</p> <p>Our business activities may negatively affect nearby communities. Therefore, there is a risk this could affect our social licence to operate. In addition, we provide social benefits to Group employees (many of whom are from our local communities) as part of our broader human resources management approach.</p>	<ul style="list-style-type: none"> • Application of community social investment (including through Regional Memoranda of Understanding with regional governments, aimed at promoting socio-economic development in our mining towns in Kazakhstan) • Application of the Participatory Rural Appraisals and the Clean Cobalt Framework in the DRC • Monitoring of social attitudes within our host regions – and community grievance mechanisms
<p>Health, safety and security risks</p> <p>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. Health risks came to the fore in 2020, with the unfolding of the COVID-19 outbreak.</p>	<ul style="list-style-type: none"> • Implementation of ISO 45001-certified occupational health and safety management systems in Kazakhstan – as well as management systems in Africa that are informed by OHSAS 18001 • Zero Harm approach towards critical health and safety risks • Safety management system audits • Integration of safety targets into managers' KPIs • Implementation of risk assessments using the Hazard Identification (HAZID) methodology • A dedicated programme to address the risks posed by COVID-19 to our workforce, while maintaining operational continuity (including PPE, social distancing, changed working patterns, screening, testing and other related approaches) (p. 14)
<p>Environmental and climate change risks</p> <p>The nature of our activities and processes mean they have, in the absence of appropriate controls, the potential to harm the environment.</p> <p>Furthermore, we face regulatory and market risks in relation to our GHG emissions that require the implementation of appropriate management actions.</p>	<ul style="list-style-type: none"> • Implementation of ISO 14001-certified and/or aligned environmental management systems • Implementation of ISO 50001-certified energy management systems in Kazakhstan • Planned implementation of renewable energy projects (p. 71) • The 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>Compliance risks</p> <p>The Group has a presence and does business in locations that are considered to pose higher levels of legal compliance risk in terms of anti-bribery and corruption; sanctions compliance; human rights; personal data protection; anti-money laundering and counter-financing of terrorism.</p>	<ul style="list-style-type: none"> • Monitoring of adherence to Group compliance policies • Extensive training and awareness programme • Regular counterparty and supply chain due diligence focused on these risks • Application of a Sanctions Compliance Programme • Compliance with the EU General Data Protection Regulation (GDPR), other applicable laws and our data protection programme – including data protection impact assessments for high-risk processes • Maintenance of a whistleblower system, including an anonymous and confidential 24-hour independently operated Group Hotline
<p>IT and information security risks</p> <p>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"> • Building of a robust cyber resilience framework for our IT and Industrial Control Systems • Prompt responses to IT failures and cyber security incidents • Implementation of continuity plans for critical IT processes • Monitoring of software licence compliance

Our material issues

Understanding what matters

During 2020 and early 2021, we completed a comprehensive update of our materiality assessment to inform both our reporting and our broader management approach. This builds on our previous materiality assessments.¹

The updated assessment involved the engagement of ERG executives and managers. In addition, it was supported by an expanded external engagement process to help ensure we remain responsive to a broad range of stakeholder viewpoints and concerns. This included engagement with representatives from:

- Government
- Lenders and other financial institutions
- Contractors
- Suppliers
- Customers
- Multilateral organisations
- Civil society

In total, we engaged 37 external stakeholders – 12 via direct interviews and 25 via an online survey.

Our material issues are prioritised using a quantitative scoring system based on the following criteria:

- The potential/actual impact of ERG on stakeholders and their interests
- The potential/actual impact of stakeholders on ERG and the achievement of its business objectives

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

Overview of materiality assessment process



Assessment outcomes

The assessment resulted in a number of changes in the prioritisation of ERG's most material issues, including increased prioritisation for:

- 'Responsible value chains', reflecting growing (and broadening) customer and regulator focus on responsible mineral sourcing and value chain assurance, as well as hardening legislative requirements
- 'Financial resilience', reflecting ERG's ongoing, active management of its financial position in the context of market volatility caused by COVID-19 and other factors
- 'Talent attraction, development and retention', reflecting the critical role this will play in the delivery of ERG's 2025 Strategy – plus the ongoing impact of technological change in reshaping future mining professions

External stakeholders also emphasised the importance of 'Energy and climate change', reflecting the long-term anticipated impact on ERG as lenders, customers and others increasingly embed the issue into their decision-making – plus the potential growth opportunities offered by ERG's production of 'transition metals'.

In terms of 'emerging' sustainable development issues that the metals and mining sector should consider in future, stakeholders identified the need for:

- Clear strategies to navigate the risks and opportunities presented by climate change and the transition to a lower carbon economy
- Enhanced collection, management and communication of 'decision-useful' ESG data to inform financial decision-making by investors and finance providers
- The application of advanced technologies such as blockchain to support the future growth of responsible mineral sourcing and value chain assurance
- Enhanced analysis (and communication) of the net positive socio-economic impacts associated with the sector

During this assessment, we have integrated issues relating to 'Artisanal and small-scale mining' under 'Community impacts', 'Community social investment' and 'Responsible value chains'. This reflects a more integrated approach to the issue, as well as the close relationship with these other thematic areas.

For further information on/analysis of our material issues, please see the Appendix, p. 102.

¹ For further details on our previous materiality assessments see ERG Sustainable Development Report 2019: <https://www.eurasianresources.lu/en/pages/sustainable-development/sustainable-development-reports>.

List of material issues²

Issues assessed	Material issues	Description
Preparing our business for the future <ul style="list-style-type: none"> • Growth and asset maintenance • Technology, efficiency and digitalisation • Organisational transformation • Financial resilience³ 	Growth and asset maintenance	<ul style="list-style-type: none"> • Acquisition, development and/or maintenance of production and other assets that support ERG's business sustainability
	Technology, efficiency and digitalisation	<ul style="list-style-type: none"> • Enhanced operational performance through improved and/or innovative technological practices and processes
	Organisational transformation	<ul style="list-style-type: none"> • Enhanced organisational performance through improved structures, processes and culture
	Financial resilience	<ul style="list-style-type: none"> • The maintenance of sufficient capital/access to capital, financial flexibility and sustainable debt levels to help ensure ERG continues as a going concern
Helping our people thrive <ul style="list-style-type: none"> • Health and safety, including COVID-19 • Talent attraction, development and retention • Employee relations • Diversity and inclusion 	Health and safety, including COVID-19	<ul style="list-style-type: none"> • Delivery of a safe and healthy workplace – and the promotion of safe working practices, including the protection of workers from COVID-19
	Talent attraction, development and retention	<ul style="list-style-type: none"> • Maintenance of a skilled and capable workforce, as well as the development of our employees
	Employee relations	<ul style="list-style-type: none"> • 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
Community development and well-being <ul style="list-style-type: none"> • Community impacts • Community social investment • Indigenous peoples 	Community impacts	<ul style="list-style-type: none"> • 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)
	Community social investment	<ul style="list-style-type: none"> • Voluntary and/or mandatory spending aimed at enhancing socio-economic conditions in our countries of operation⁴
Environmental stewardship <ul style="list-style-type: none"> • Managing impacts on air and water • Energy and climate change • Waste recycling and management, including tailings • Responsible closure and transfer • Water availability • Biodiversity 	Managing impacts on air and water	<ul style="list-style-type: none"> • Responsible management of emissions to the environment – including particulates, NOx, SOx, process water and runoff⁵
	Energy and climate change	<ul style="list-style-type: none"> • The use and/or production of energy in all its forms (as well as associated GHG emissions) plus the impact of climate change on ERG and other stakeholders
	Waste recycling and management, including tailings	<ul style="list-style-type: none"> • Responsible approaches to waste generation, management and disposal (e.g. overburden, tailings, slag, general industrial waste, etc.)
Our broader role in society <ul style="list-style-type: none"> • Value generation and distribution • Integrity and compliance • Responsible value chains • Government relations and policy 	Value generation and distribution	<ul style="list-style-type: none"> • The generation of economic value by ERG – and the distribution of such value to its stakeholders
	Integrity and compliance	<ul style="list-style-type: none"> • Maintenance of Group/employee compliance with regulatory requirements and ERG's compliance commitments
	Responsible value chains	<ul style="list-style-type: none"> • The responsible management of indirect supply chain impacts – and the delivery of assurance to downstream value chain participants regarding the responsible sourcing of minerals
	Government relations and policy	<ul style="list-style-type: none"> • Relations between ERG, host country governments and other third-party governments, including positive and negative mutual impacts

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. Similarly, 'Human rights' cuts across multiple thematic issues (e.g. employees, value chains and local communities). As such, we have integrated human rights into these areas of analysis where relevant, rather than treating it as a distinct, separate issue. An overview of our broader approach to human rights can be found on p. 86.

³ See 'Financial resilience' section in Introduction chapter.

⁴ Please note that community-focused spending linked to our employees is addressed under 'Employee relations'.

⁵ Excluding carbon emissions, which are addressed separately under 'Energy and climate change'.



FU

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

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

MATERIAL ISSUES INCLUDE:



GROWTH AND ASSET MAINTENANCE

[READ MORE ON P. 24](#)



TECHNOLOGY, EFFICIENCY AND DIGITALISATION

[READ MORE ON P. 28](#)



ORGANISATIONAL TRANSFORMATION

[READ MORE ON P. 32](#)



Preparing our business for the

UTURE

2020 HIGHLIGHTS

Establishment of a
Group-level Environment,
Social and Governance
(ESG) Committee

Full **Phase 1** production
and completion of
Phase 2 construction
at Metalkol RTR

Continued rollout of
our **Smart Mine** initiative
in Kazakhstan



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 SUSTAINABLE DEVELOPMENT GOALS

UN SDG

ASSOCIATED UN TARGETS



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

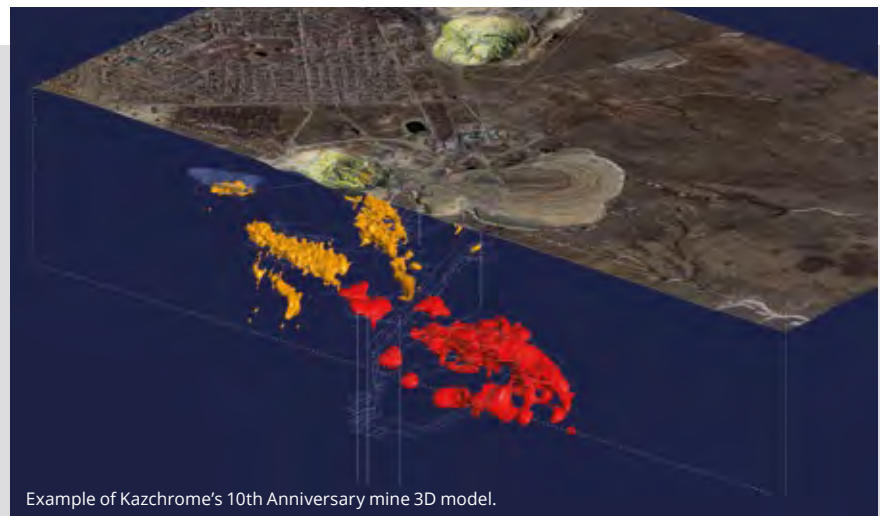
9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable

In 2020, we reduced our capex significantly to US\$572 million (2019: US\$869 million), reflecting:

- The completion of Phase 1 construction at Metalkol RTR in 2019
- Efforts to enhance our liquidity in the face of the COVID-19 pandemic and its associated economic uncertainty – including the postponement of non-critical projects. Instead, we focused our capex on maintaining our existing production profile and on enhancing the efficiency of our existing assets

Nonetheless, given positive dynamics in global commodity markets (p. 16), we plan to focus on maintaining our current production, which will require expanded capex. This will be used to ramp up investment in our existing assets and – using stringent project management standards – unleash their full potential. We will do so while ensuring the highest environmental, social and occupational health and safety standards.

In 2020, we took a number of actions to support the maintenance and growth of our portfolio (see the box opposite).



Example of Kazchrome's 10th Anniversary mine 3D model.

ERG Capital Projects

ERG Capital Projects (ERG CP) consolidates and enhances our project management capabilities in Kazakhstan and will, in combination with the recruitment of highly qualified personnel and process development, support future project delivery.

At the end of 2020, ERG CP was managing 33 strategic capital projects across the Group.

Efficient Mine project

Our Group-level project due diligence and mine planning team (and its third-party experts) are continuing to update our geological models and enhance our mining plans under our Efficient Mine project.

In 2020, this included our continued transition towards world-class 3D geomodelling in Kazakhstan, including the completion of the process at our 10th Anniversary mine¹ (Kazchrome) and further advancement at our Kacharsky iron ore and Shubarkol Komir mines.

We plan to apply this same approach at our active sites in Africa.

1 10th Anniversary of Independence of Kazakhstan Mine.

CAPEX FOCUS IN 2020: SUSTAINING PRODUCTION AND REDUCING FUTURE COSTS

Our 2020 capex programme focused on maintaining our production volumes and reducing future production costs at our existing assets in Kazakhstan. Key examples included:

- The development of the 10th Anniversary Mine at Donskoy GOK (Kazchrome)
- The further enrichment of slime tailings and the production of saleable concentrate at Donskoy GOK
- Productivity improvement projects at Smelting Workshop No. 4 at Aktobe Ferroalloys Plant
- The ongoing renovation of Aksu Ferroalloys Plant's Workshop No.6
- The reconstruction of our Kacharsky iron ore mine
- The development of Aluminium of Kazakhstan's open pits
- Advancing the development of Shubarkol Komir's Special Coke Plant (p. 27) – with construction having started in 2021

In addition, spending has also focused on enhancing our non-production performance, including:

- Strategic environmental initiatives, such as the installation of filter technology to improve our emissions to air at key operations
- Health and safety initiatives, including a networked underground control system at the 10th Anniversary Mine (p. 37)
- Improving living and working conditions for our employees, including the modernisation of onsite accommodation at Shubarkol Komir



ERG Exploration in Kazakhstan

Our ERG Exploration entity, which was launched in 2020, is focused on the identification and development of new mineral deposits in Kazakhstan – as well as the review and development of existing (but hitherto unexploited) deposits. Its work supplements the existing brownfield geological data held by our production sites.

ERG Exploration has been tasked with replenishing our Mineral Resource base. It is currently focused on more than 40 projects, many of which are located in the Aktobe and Kostanay regions. This includes the strategic targeting of bauxite, manganese, chromite and iron prospects, as well as new, in-country opportunities focused on copper, nickel and cobalt.

ERG Exploration will help implement a centrally coordinated, systematic and strategic approach towards developing exploration projects, while leveraging advanced AI and drone technology.

COBALT AND COPPER Ramp-up and expansion at Metalkol RTR (DRC)

Metalkol RTR reprocesses historical cobalt-copper tailings near Kolwezi in the DRC. These tailings accumulated over decades of mining at the site by previous operators, including at the existing Kingamyambo tailings deposit and in the Musonoi River. This strategically important operation has made us a major player in the global cobalt market. Furthermore, by reprocessing and responsibly storing these tailings in a safe, modern facility, we are:

- Supporting the development of affordable battery technology and, by extension, the electric vehicle revolution (p. 9)
- Delivering responsible value chain assurance through our Clean Cobalt Framework (p. 90)
- Reducing local pollution risks by reclaiming poorly stored and managed legacy tailings, and relocating them to a modern, responsibly managed facility (p. 76)

In 2020, Metalkol reached full Phase 1 production capacity – following the implementation of corrective measures to address lower than expected output during its initial operating phase in 2019. In addition, we completed Phase 2 construction, with the additional plant increasing its production. Indeed, by the end of 2020, production had reached 80% of cobalt hydroxide and 75% of copper metal Phase 2 design capacity (i.e. 16.5kt of cobalt hydroxide and 80.3kt of copper metal) – making a material contribution to Group EBITDA (p. 12).

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.

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

In 2020, we continued to develop our Frontier copper mine through the expansion of its open pit – referred to as ‘Cut 3’. The majority of waste stripping was undertaken in 2019, with stripping activity decreasing in 2020. Cut 3 helped increase production at the mine by 24.6% to 103.3kt copper contained in concentrate (2019: 82.9kt) – again making a material contribution to Group EBITDA (p. 12). In combination with the processing of ore stockpiles, Cut 3 is expected to extend the life of mine to 2024.

We also continued an additional geotechnical drilling campaign and a slope stability assessment. These will support a further pit expansion (‘Cut 4’), which has the potential to extend the life of mine by approximately 10 years. In 2020, we completed a pre-feasibility study and developed a further drilling programme to support a final investment decision.

ALUMINA AND ALUMINIUM

Kazakhstan Aluminium Smelter (Kazakhstan)

Kazakhstan Aluminium Smelter safely took production to 265kt (2019: 263kt) of saleable aluminium production, 15kt above its original designed capacity. This reflected ongoing technological enhancements at the plant, including increased amperage during electrowinning.

In 2020, we postponed our major KAS-2 expansion project, which aims to significantly increase production at the smelter. This followed the completion of two bankable feasibility studies and reflects uncertainty caused by the COVID-19 pandemic and price forecasts for aluminium. We will continue to monitor market conditions to identify if/when the project will become more commercially viable.

FERROALLOYS

Development of Kazchrome’s 10th Anniversary mine (Kazakhstan)

We are examining options to increase production at this world-class chrome ore body. This will help address projected production reductions at other mines supplying our ferroalloys plants – and help increase Kazchrome’s overall production volumes.

In 2020, we continued to develop the mine’s Almaz-Zhemchuzhina and Millionnoe deposits, as well as supporting power and ventilation infrastructure. This included the initiation of work to install a new fan unit, deepen the ‘Skipovoy’ ventilation shaft and develop deep-level mine infrastructure.



Furnace reconstruction at Kazchrome's Aksu Ferroalloys Plant (Kazakhstan)

In August 2019, we started the commissioning of Aksu Ferroalloys Plant's smelter furnace No. 64 following a major reconstruction process. However, the process took longer than expected and required the application of additional improvements. Commissioning was completed in June 2021 and we are now working to achieve design capacity. We are also exploring how to take the renovation of Workshop No. 6 forwards while mitigating future project risks. This includes a re-evaluation of available technologies that we can use to improve its efficiency and reduce its environmental impacts.

OTHER PROJECTS

Other growth and renewal projects that support the sustainability of our business include:

Advancement of BAMIN (Brazil)

BAMIN, a wholly-owned ERG subsidiary, is developing what will be an 18 million tonne per year, low-cost, high-margin greenfield iron ore operation in Brazil, consisting of:

- The fully owned and licensed Pedra de Ferro iron ore mine
- The Porto Sul deep-water port, over which BAMIN has the relevant development licences
- The first stage of the multi-user West-East Integration Railway (FIOL), which was owned and being constructed by the Federal Government – but which was awarded to BAMIN in auction in April 2021

As configured, this integrated project enjoys high-grade, low-impurity ore, giving it an important advantage in terms of competing against Australian ore exports to China. This is particularly the case given the Chinese Government's prioritisation of higher-quality iron ore imports to help reduce the domestic iron sector's greenhouse gas (GHG) emissions and impacts on local air quality. Indeed, one of the mine's most important impacts will be its relatively low cross-lifecycle carbon emissions (i.e. compared to the sector average).

In 2020, BAMIN started initial production. During this phase, it will produce up to 1 million tonnes of high-grade, low-contaminant ore per year. It has the potential, subject to relevant approvals, to increase production to 2 million tonnes per year – transitioning it from a project to an active operation.

In addition, construction was started on the port facilities at Porto Sul.

In the meantime, we are actively engaging potential co-investors and joint venture partners to help us further develop the operation, take it to full production and become a major global supplier of high-grade, low-contaminant iron ore.

Upgrading of SSGPO's processing facilities (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 continue operations. We have carried out prefeasibility studies on two strategic options to support future production volumes, while also reducing future production costs and improving product quality:

- The construction of a new processing facility at our Kacharsky iron ore mine
- The modernisation (and extension of life) of the existing Rudny processing facility

These studies were completed in 2020. Once approved, the selected option will be moved to the design phase.

New special coke plant at Shubarkol Komir (Kazakhstan)

We continued to pursue the development of a new 400ktpa special coke plant at Shubarkol Komir, resulting in the initiation of construction in April 2021. We expect production to start in 2023. It is anticipated that this will help us meet internal demand for cost-effective reductants used during the smelting process.

In addition, we are exploring the potential construction of a power plant that would be fuelled by waste gases from the new special coke plant. This would help reduce its consumption of electricity purchased from external sources.

Energy projects in Kazakhstan

Kazakhstan plans to reduce national GHG emissions by 15% (unconditional)/25% (conditional) by 2030 – and achieve carbon neutrality by 2060. Furthermore, the European Union (EU) – a key ERG export market – has proposed the introduction of potential levies on non-EU imports based on their carbon footprint.

In this context, we are working to increase the proportion of energy we get from non-coal sources, including through the planned development of wind power generation projects (p. 71). The fixed nature of our coal power generation assets (which generate power for our own operations, with some power also being provided to third parties) – as well as the reliance of the broader Kazakhstan economy on coal power generation – means this is likely to be a gradual process that takes place over time. Nonetheless, in 2021 we initiated a formal process to establish 2030 renewable energy and GHG reduction targets.

Separately, we also revised our strategy in relation to the reconstruction of (coal-fired) Power Unit 7 at Aksu Power Plant (EEC). We had planned a complete replacement, giving the Power Unit a further service life of 30-40 years. Given current and anticipated environmental regulation and the potential for a more carbon-constrained operating environment in future, these plans have been revised. Instead, we will carry out a partial reconstruction that will help the Power Unit comply with Kazakhstan's new Environmental Code and give it a shorter service life of 10-15 years.

PLANNING FOR THE FUTURE

In 2021, we plan to enhance the role of ERG Capital Projects. This includes giving it a greater role in terms of project planning, implementation and monitoring.

In addition, we plan to:

- Increase overall capex in a disciplined, impactful way, with an initial focus on maintaining our current assets in Kazakhstan
- Carry out a major restructuring of our capital investment management system – to help ensure projects are implemented on time, within budget and at an appropriate standard
- Ramp up Phase 2 production at Metakol RTR and continue implementing our Clean Cobalt Framework (p. 90) to deliver traceable responsible mineral value chain assurance to our customers
- Evaluate the investment decision to extend Frontier's life of mine by implementing the Cut 4 project
- Continue working to explore options that could support the commercial sustainability of our Boss Mining and Chambishi Metals operations
- Start implementing (subject to the granting of relevant licences) plans to take iron ore production at BAMIN up to 2 million tonnes a year



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 SUSTAINABLE DEVELOPMENT GOALS

UN SDG

ASSOCIATED UN TARGETS



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

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

KEY ISSUES AND INITIATIVES

Operational Efficiency initiatives

Our Operational Efficiency team in Kazakhstan continues to take a systems-based approach to achieving ongoing, incremental improvements in efficiency and productivity. This includes the application (in the context of our broader transformation efforts, p. 32) of lean management principles and cross-cutting employee collaboration to improve 'how things are done'. Under this approach, the best improvement opportunities identified by employees are selected every month, quarter and year.

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

- **Ideas Factory:** This concept is used to gather employee-identified improvement ideas at our operations in Kazakhstan. In 2020, the Ideas Factory was used to collect over 16,000 employee ideas, of which 10,969 were accepted for implementation – with anticipated savings of US\$9 million (2019: Over 8,000 employee ideas submitted, 4,462 accepted and US\$14.9 million in anticipated savings). This increase suggests that the application of the ERG Way Production System (p. 32) is continuing to increase employee engagement in this regard
- **ERG Innovators' Forum:** COVID-19 meant our annual Innovator's Forum (which was focused on enhancing workshop practices) took place online. This resulted in higher participant numbers – including more than 200 employees and more than 130 delegates.

The Forum not only generates innovative initiatives to support our operations, but helps participants focus on the practicalities of implementation

- **Innovation portal (Erg-innovation.kz):** Our new, publicly accessible innovation portal sets out some of the key challenges facing our business – ranging from the need for more efficient sintering technology at Pavlodar Aluminium Plant to identifying economically viable ways to integrate waste ash and slag into concrete. Anyone who believes they have solutions to these challenges – whether they are early stage or already commercialised – are invited to apply and have their idea assessed for potential support, development and, ultimately, commercial adoption. By the end of 2020, we had published 28 technological challenges and received more than 100 proposals

Examples of ongoing Operational Efficiency initiatives at Aktobe Ferroalloys Plant (Kazchrome)

Details of initiative	Anticipated annual economic impact
Changed ore composition at Smelting Workshop No. 4 The use of by-products from the pelletising process, which reduces production costs, while also delivering consistent product quality.	\$2.1m
Use of corrosive conductive powder at Smelting Workshop No. 1 Replacement of a metal concentrate used to produce ferrochrome with a corrosive, electrically conductive powder, improving product costs and quality.	\$1.0m
Reduced emergency downtime at the sediment complex Equipment changes at the sediment complex to enhance enrichment performance and minimise equipment failures.	\$0.8m

In 2020, this approach helped deliver cost savings of US\$12 million (2019: US\$68 million) in Kazakhstan – with the reduced figure versus the prior year reflecting the impact of COVID-19-related disruption. Nonetheless, the 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.

Operational innovation

Our dedicated Research & Development Centre in Kazakhstan helps drive technological innovation to support our operations. Examples of ongoing projects are listed below.

In addition, the Centre is working on a range of projects to, amongst other things, reduce the ash content of our coal at Shubarkol Komir and EEC, and upgrade coal from Shubarkol Komir so it can be used in metallurgical processes.



EXAMPLES OF OPERATIONAL INNOVATION PROJECTS IN KAZAKHSTAN

Donskoy GOK (Kazchrome) Slimes 2 project

The successful development and testing of flotation technology (including vibro-compression using polymers) to significantly improve the enrichment of chrome oxide-bearing tailings.

This will supplement our chrome concentrate output (p. 12), while helping reduce the site's tailings footprint.

Production of ultra-low carbon ferrochrome at Kazchrome

Investigation – with external partners – of the potential production of ultra-low carbon ferrochrome using established vacuum heat treatment technology. This is used in the production of more complex and demanding steel alloys. If successful, this technology would also reduce the product's environmental impact as it avoids the production of slag.

SSGPO Liquid Natural Gas (LNG) fuel conversion project

Assessment of the potential conversion of SSGPO's diesel truck fleet to an LNG system – with the aim of reducing both costs and emissions to air.

While we had planned to pilot this project in 2020, work was suspended due to COVID-19-related disruption. Nonetheless, we resumed work in 2021.

OPERATIONAL EFFICIENCY IN ACTION: KAZAKHSTAN ALUMINIUM SMELTER

Under our 'Ideal KAS' initiative, we aim to make the smelter one of the top five in the world in terms of operational efficiency.

In 2020, we continued to make this a reality by:

- Increasing current strength in the electrolyzers to release additional volumes of primary aluminium, which was achieved during the year. This increased primary production by 2,000 tonnes – equivalent to US\$1.9 million in additional revenue

- The application of energy-efficient pot-liners, increasing the pots' lives by seven years. This process is due to be completed in 2022
- The optimisation of alumina consumption through the use of 3D level sensors. This has supported safer, more efficient production



Digital innovation

Our Group-level Digital Strategy is moving ERG further towards Industry 4.0. This is supported by well-aligned digital sub-strategies at a functional level, as well as a parallel focus on cyber security.

Our Strategy is focused on:

- The development of key employee capabilities (e.g. robotisation and big data)
- Ensuring cost-effective digital investment decisions
- Building adaptive/modular digital architectures to support our broader business and production processes

We are currently at an early stage of our digitalisation journey. The ultimate aim is to move beyond automation and the optimisation of production to develop an integrated 'universe' of interconnected data, in which our operations, IT solutions, equipment and devices are combined into a single system supported by artificial intelligence – covering the full range of our activities, from exploration through to product delivery.

More broadly, we are continuing to explore how we can leverage new digital technology to support independent, sustainable development in our local communities – including through the facilitation of local entrepreneurship (p. 81).

Exploring how blockchain technology can 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
- Be used to track product-related carbon emissions (and, potentially, other environmental, social and governance (ESG) indicators) across the value chain

For further information, see p. 92.



EXAMPLES OF DIGITAL INNOVATION PROJECTS

Improving onsite logistics through the Smart Mine initiative

In 2020, we rolled out our Smart Mine initiative at Aluminium of Kazakhstan, and continued its rollout at Shubarkol Komir (where it was launched in 2019). This follows its successful application at the Kacharsky iron ore mine. The system uses specialist dispatching systems and software – as well as real time, 4G-based positioning of personnel and equipment – to enhance the management of dump trucks, excavators and other moving equipment. This has already increased productivity (in terms of ‘volumes moved’) at the Kacharsky iron ore mine by 17% over the three years of its operation – suggesting it will have a similar positive impact at our other operations.

We plan to roll out the initiative at SSGPO's Sarbay and Kurzhunkul mines, as well as at EEC's Vostochny coal pit.

Using artificial intelligence (AI) to support arc furnace operations at Aksu Ferroalloys Plant

The introduction of an AI ‘Digital Advisor’ at Kazchrome's Aksu Ferroalloys Plant is helping to control the operation of the arc furnace at Smelting Shop No. 6. The Digital Advisor uses dynamic data to predict the development of technical faults, and issues recommendations for their avoidance. This includes a focus on the fractional and chemical composition of the chromium raw materials and reducing agents used in the smelting process. The Digital Advisor was applied to furnace No. 62 in 2021 and we are planning a broader rollout in future.

Using automated purchasing to support procurement at KAS

In 2020, KAS launched an initiative to apply robotic automation to the procurement of selected goods. This has enhanced the efficiency of our procurement process by reducing the workload placed on purchasing managers. The system will be piloted at Kazchrome and EEC in 2021.

PLANNING FOR THE FUTURE

In 2021, we plan to continue:

- Applying our operational efficiency programmes and initiatives
- Developing our Digital Strategy and embedding innovation projects across the business

- Identifying and funding start-ups that could benefit our business (p. 81) – and pursuing the development of artificial intelligence technology

In addition, we plan to proceed with the postponed rollout of our Smart Mine initiative to SSGPO's Sarbay and Kurzhunkul mines, as well as EEC's Vostochny coal pit.



ORGANISATIONAL TRANSFORMATION

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 enhanced organisational effectiveness and the development of a culture of continuous improvement – supported by relevant management tools and processes.

Our focus on organisational transformation is aimed at applying incremental improvements to our business structures and processes on a continuous basis – and through the application of international standard systems, practices and organisational structures.



The establishment of an ESG Committee reflects our ambition to further improve our sustainability performance, something which is becoming increasingly important in the metals and mining industry.

Benedikt Sobotka
CEO of ERG

KEY ISSUES AND INITIATIVES

Establishment of a dedicated ESG Committee

In the first half of 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 includes Group-level executives as well as senior managers with various backgrounds from across the Group. Key areas of focus include:

- Group policy (and accountability)
- Goal-setting
- Analysis and monitoring of ESG-related projects
- Reporting
- The development of ESG-related competencies across the organisation

The ERG Way Production System in Kazakhstan

The ERG Way Production System is one of the key tools we use to promote a more effective working culture in Kazakhstan, where most of our assets and people are located. This supports efficiency across the product lifecycle, including through the application of lean management principles.

In particular, the ERG Way Production System aims to:

- Promote continuous improvement in production efficiency, with a focus on equipment productivity and sustainable cost reduction

- Improve site-level management efficiency through the application of common principles and effective employee/team interaction
- Encourage employees to engage proactively in production improvement processes
- Support systemic change management in the production process, including through employee empowerment and cross-functional collaboration

Following pilot applications at Kazchrome's Aksu Ferroalloys Plant and Aktobe Ferroalloys Plant, as well as at the Kacharsky iron ore mine, we had intended to roll out the system to Kazchrome's and SSGPO's other operations. The COVID-19 outbreak meant these plans were suspended until 2021. We instead focused on maintaining the progress already achieved at Aksu, Aktobe and Kacharsky. This included:

- Ongoing improvements to onsite working conditions (including the physical environment) to enhance employee effectiveness
- More effective communication and cooperation between all employee levels, through an ERG Academy training process focused on enhancing how teams approach:
 - People (i.e. organisational structure, safety, etc.)
 - Processes (i.e. goals, bottlenecks, etc.)
 - Tools (i.e. lean management)
 - Production (i.e. productivity)

We plan to roll out the system to all parts of our business in Kazakhstan, supported by dedicated training for supervisors and managers at every level.

Driving cultural change through the ERG Academy in Kazakhstan

The ERG Academy plays a key role in supporting cultural transformation within our business in Kazakhstan – and the broader implementation of our 2025 Strategy. Key activities in 2020 included:

- The evolution (in conjunction with our Human Resources and Compliance functions) of ERG's corporate culture, including:
 - The online promotion of ERG's corporate Values (including via workshops and participation in competitions and other events)
 - Training seminars focused on issues ranging from soft skills through to lean manufacturing
- Support for the implementation (with our Operational Efficiency team) of the ERG Way Production System – with a focus on training. In 2020, this required the successful transition to online training

Organisational design and efficiency

We continued our efforts to build effective organisational structures and improve organisational transparency across the Group. Activities included:

- The centralisation of support services (including certain risk, legal, IT and finance professionals) into shared service centres and centres of excellence at appropriate locations in Kazakhstan and globally.
- The 'flattening' and rationalisation of management structures
- The consolidation of functions across the Group (including titles, roles and responsibilities)
- The reorganisation of our Maintenance and Repair services in Kazakhstan
- The implementation of a programme to identify and eliminate unnecessary administrative processes (and, by extension, associated costs) across the Group

In addition, some of our support functions (including our Maintenance, Repair and Overhaul (MRO) and Procurement functions) optimised their processes and management practices through lean management, process automation and automated market analysis.

MRO process optimisation examples in Kazakhstan

Programme	Examples of initiatives	Cost savings in 2020
Sensor-based diagnostic systems	Expanded application of portable diagnostic devices, as well as automated diagnostic systems to monitor equipment and help address potential failures. In 2020, this helped us avoid 418 equipment failures (and stoppages).	\$13M
Repair time efficiency	Ongoing focus on reducing equipment repair times, including the use of 'lean' processes such as rapid equipment changeover, the rational organisation of workspaces and the replacement of units during the repair process (which reduces repair time). In addition, repair-related losses are identified and analysed to prevent reoccurrence.	\$21M
Technical development and engineering	The application of new repair materials and repair methods. This includes, for example, the application of mechanical connectors to operations' conveyor belts, which is faster, reduces equipment downtime and – over the lifetime of the equipment – saves costs.	\$14M

PLANNING FOR THE FUTURE

In 2021, we plan to continue:

- Embedding and developing the ERG Way Production System – including its rollout to Kazchrome's Donskoy GOK operation, SSGPO's processing plant and mine administration, Aluminium of Kazakhstan's Pavlodar Aluminium Plant and EEC's Power Plant

- Further reduce our general and administrative costs through process optimisation, the elimination of inefficient processes and the centralisation of key functions into shared service centres

In addition, we are planning a series of online surveys, questionnaires, focus groups and individual interviews to better understand (and help us enhance) our corporate culture.



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 reflected in our new Human Resources functional 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 delivery of comfortable workplaces and living conditions

In line with our Values, we also work together as a team to achieve our goals.

Looking to the future, technological development is changing global labour markets at a rapid rate. In this context, we focus on developing an innovative and flexible workforce that will support both the current and future needs of the business.

For information on how we managed the immediate impact of the COVID-19 outbreak in 2020, including with respect to the health and safety of our workforce, please see p. 14.

MATERIAL ISSUES INCLUDE:



HEALTH AND SAFETY, INCLUDING COVID-19

[READ MORE ON P. 36](#)



TALENT ATTRACTION, DEVELOPMENT AND RETENTION

[READ MORE ON P. 40](#)



EMPLOYEE RELATIONS

[READ MORE ON P. 44](#)



2020 HIGHLIGHTS

Continued the roll of enhanced underground safety monitoring in Kazakhstan

Expanded our Group-wide employee competency evaluation programme

Supported the rollout of the Atlas of New Professions in Kazakhstan



HEALTH AND SAFETY, INCLUDING COVID-19

Strategic context

A happy and professional team:

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

RELEVANT UN SUSTAINABLE DEVELOPMENT GOALS

UN SDG

ASSOCIATED UN TARGETS

3 GOOD HEALTH AND WELL-BEING



3.8 Achieve universal health coverage

8 DECENT WORK AND ECONOMIC GROWTH



8.8 Protect labour rights and promote safe and secure working environments for all workers

WE AIM TO ACHIEVE

Zero Harm

In line with our Values, we put safety first. We are fully committed to delivering a healthy, safe, productive and stable working environment for all our employees and contractors. This includes our ongoing efforts to continually improve our safety performance and to achieve Zero Harm.

Our operations in Kazakhstan are certified to the ISO 45001 occupational health and safety management system standard.¹ In addition, our Metalkol RTR operation in the DRC plans to achieve certification to ISO 45001 in 2022.² At our other operations in Africa, our Safety, Health and Sustainability (SHS) management system is informed by OHSAS 18001.

OUR RESPONSE TO COVID-19

Protecting our people

We continued to implement a coordinated response to COVID-19 to help secure the health and well-being of our workforce.

For further details, please see p. 14.

For further information on how we address health and safety issues in our supply chain, please see p. 88.

KEY ISSUES AND INITIATIVES

Employee safety in Kazakhstan

Enhanced safety management system

In 2020, we focused on the ongoing development of an integrated, risk-based occupational and process safety management system, as well as the automation of our core safety processes.

The new system will support our efforts to assess and manage safety risks on an ongoing basis. Key workstreams during the year included:

- **Control of fatal risks:** The launch of a multi-year programme to enhance the management of fatal risk controls. In 2020, this included a particular focus on:
 - Working at heights, including the ongoing rollout and embedding of our 2019 safety standard, the establishment of a dedicated training facility at Aksu Ferroalloys Plant and the provision of remote training for around 2,000 employees
 - Enhanced risk assessment processes, including through the rollout of the Hazard Identification (HAZID) methodology across our operations

- **Process automation:** The ongoing automation and digitalisation of our data management and reporting processes. For example, we commenced the development of a digital platform that will support enhanced management reporting on incident investigations and follow-up actions, safety audits, risk assessments and access controls for higher risk sites

These workstreams were informed by the findings of an in-depth safety diagnostic carried out in 2019 across all our operations and our corporate office in Kazakhstan.

Other strategic safety initiatives

During the year, we also implemented several other measures to help enhance safety at our operations, including the mitigation of fatality risks. These included:

- **Personal protective equipment (PPE):** The ongoing rollout of a programme to provide enhanced PPE across our operations until 2021. This included the provision of personal gas safety analysers to employees at our Aktobe and Aksu ferroalloys plants and KAS
- **Buildings and structures:** The completion of a pilot project at Kazakhstan Aluminium Smelter to develop a digital system to monitor building and construction safety and enhance the efficiency of spending on related safety improvements
- **Training and communication:** The ongoing integration of 'safety dialogues' into our League of Professionals programme (p. 42) – as well as the provision of safety training for a range of production personnel under the ERG Way Production System (p. 32)

¹ With the exception of 3-Energootalyk, which we purchased in 2018.

² Certification had been planned for mid-2021, but was delayed due to COVID-19.

ENHANCED UNDERGROUND SAFETY MONITORING IN KAZAKHSTAN

We are developing a networked underground control system at the 10th Anniversary Mine³ to coordinate underground operational activities and make them both safer and more efficient. This follows the implementation of a similar underground system at SSGPO's Sokolovskaya mine in 2019.

The new system includes:

- Improved management of the location and movement of personnel and vehicles (both locomotive and 'wheeled' vehicles), including tracking, traffic control and collision avoidance
- Wireless underground communication
- Atmospheric control, including centralised monitoring of data from personal sensors and built-in carbon monoxide, hydrogen and nitrogen oxide gas analysers
- Hazardous area control, including hazard notification for drivers
- Video monitoring

In 2021, we plan to commence installation of the new system.



Employee safety in Africa

In Africa, we continued to implement our integrated Safety, Health and Sustainability (SHS) management system. This is operationalised through the application of an IsoMetrix software programme at all our operations. IsoMetrix supports the 'plan-do-check-act' cycle by tracking SHS audits and improving central oversight and data analytics.

In 2020, key safety initiatives included:

- The undertaking of 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
- The undertaking of internal industrial hygiene audits at Metalkol RTR in preparation for future external audits against the ISO 45001 management system standard (see 'Planning for the future' on p. 39)
- The implementation of our Visible Felt Leadership safety programme at Metalkol RTR and Frontier, including the undertaking of regular site visits by senior operation-level managers and the hosting of cross-functional meetings to share safety best practices

Employee safety in Brazil

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.

During the year, we continued to implement measures to support the safe development of the operation. This included:

- The ongoing enhancement of contractor safety standards (in preparation for an increase in our contractor numbers during the full construction phase)
- The ongoing implementation of comprehensive safety inductions for all new employees and contractors
- The rollout of new mandatory safety training to support regulatory compliance, as well as role-specific training focused on higher risk activities

Contractor management

We place particular emphasis on enhancing contractor safety across our global operations. This includes our ongoing efforts to understand and remediate potential gaps between contractor and employee safety standards and/or behaviours.

Key steps in Kazakhstan included:

- Initial development of a centralised database of pre-approved contractors who meet our new contractor safety standard. This will help support the application of consistently high contractor safety standards, and expedite our contracting processes
- The close management of contractor work schedules to help ensure that dedicated ERG safety specialists are onsite to oversee higher risk activities

At Metalkol RTR in the DRC, we introduced new safety audits and enhanced safety inductions for onsite contractors. In addition, we continued to implement a traffic management programme to enhance safety controls for contractors transporting hazardous reagents and other materials (including our processed minerals). The programme includes driver safety inductions and regular risk assessments, external traffic risk management plans and the application of an automated vehicle tracking system. At Frontier, we run regular contractor safety meetings to discuss key SHS matters.

Regrettably, a contractor fatality occurred at Metalkol RTR in 2020, demonstrating the need for ongoing focus and action on contractor safety. Details on our response to this tragic incident are provided on p. 39.

³ 10th Anniversary of Independence of Kazakhstan Mine.

Occupational health

Kazakhstan

Some of our workplace activities, if not proactively managed, can present latent risks to the health of our employees (e.g. potential exposure to dust, noise, vibrations and heat). As such, 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

In addition, we implemented several measures to help our employees manage non-occupational health issues (see below).

Africa and Brazil

In Africa, we continued to implement an Industrial Hygiene Programme at our Metalkol RTR and Frontier operations in the DRC. This aims to protect our employees' health at work, monitor and maintain regulatory compliance, and manage key health risks.

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 undertook water spraying to suppress dust on the mine site, and provided enhanced PPE and biannual employee medical examinations. We also delivered employee awareness training on dust, noise and acid mist exposure.

In addition, we commissioned an accredited third party to undertake occupational radiation monitoring at Metalkol RTR based on the recommendations of our Environmental Social Impact Assessments (ESIAs). This confirmed that radiation levels are within legally permitted limits.

In Brazil, we strengthened our occupational health services through the contracting of a third-party 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 continued to provide annual occupational health assessments for all employees.

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.

During 2020, many of our physical activity programmes were suspended due to the impact of COVID-19. For information on how we managed the impact of COVID-19 more broadly, including with respect to the health and safety of our workforce, please see p. 14.

Kazakhstan

In 2020, we invested US\$3.9 million to acquire a medical centre in Kazakhstan. This significantly expands our capacity to provide free medical services to employees, including those suffering with COVID-19 (p. 14). In addition, we provide enhanced healthcare cover for our employees in Kazakhstan (in excess of what is required by law). This includes dental care, additional medication allowance and certain preventative treatments. In 2020, we invested US\$6.6 million in these programmes (2019: US\$9 million).

During the year, we also continued to implement a preventative examination programme, which includes diagnostic examinations for detecting coronary heart disease in men over 40 and screening for breast cancer in women over 40.

Finally, we launched a range of online exercise and well-being initiatives to support our employees during the pandemic (p. 46).

Africa and Brazil

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

- Implement malaria 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
- 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 also entered into agreements with two clinics in Kolwezi and Lubumbashi to provide enhanced healthcare to our employees and their families. The clinics provide emergency medical care, surgery, paediatric care and a pharmaceutical dispensary, amongst other services. At Frontier, we offer medical support to employees and their families through an onsite clinic and/or through affiliated local hospitals.

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.

PERFORMANCE

Fatalities

We deeply regret the loss of three employees and one contractor in 2020 (2019: 10 employees and one contractor). We send our sincere condolences to all those affected. Any fatality is unacceptable, and we will continue to work tirelessly to further reduce their occurrence.

We undertook thorough investigations into each fatal incident to identify appropriate prevention measures and to minimise the risk of recurrence. Our investigations into the causes of the two fatalities at our operations in Kazakhstan resulted in the following responses:

- The installation of enhanced video surveillance systems to improve monitoring of higher risk sites
- The enhancement of our audit procedure for machinery and equipment to strengthen corporate-level oversight of fatality risks
- The purchase of upgraded equipment to further reduce the risk of injury or fatality
- The delivery of specialist first aid training for employees

In addition, we continued to enhance our region-wide risk assessment processes in Kazakhstan – including through the rollout of the Hazard Identification (HAZID) methodology (p. 36).

Key safety indicators by year

Indicators	2020	2019	2018	2017	2016
Fatalities (employees only)	3	10	1	3	10
Fatalities (contractors only)	1	1	4	3	5
LTIs (employees only)	67	85	70	83	84
LTIs (contractors only)	13	17	13	10	6
LTIFR (employees only)	0.61	0.83	0.58	0.69	0.76

Key safety indicators by region

Indicators	Kazakhstan	Africa	Brazil
Fatalities (employees only)	2	1	0
Fatalities (contractors only)	0	1	0
LTIs (employees only)	67	0	0
LTIs (contractors only)	12	1	0
LTIFR (employees only)	0.67	0.10	0

In Africa, our investigations into the causes of the two fatalities at our operations resulted in, amongst other measures:

- The mandatory presence of more senior personnel during night operations (i.e. instead of more junior supervisors)
- Clearly documented instructions for planned activities, as well as enhanced inspections
- Team safety discussions at the start of each shift
- 'Pre-use' inspections of vehicles and machinery prior to each shift to ensure their proper operation
- The establishment of additional embankments to prevent vehicle accidents
- The launch of an initiative to enhance our contractor safety management systems and ensure their consistent application across our operations

We also applied further measures in Kazakhstan and Africa to enhance our management of contractors (p. 37).

COVID-19

Tragically, 40 of our colleagues died from health complications relating to COVID-19 or pneumonia in 2020. We send our sincere condolences to their loved ones during this difficult time. We continue to implement a comprehensive response to COVID-19 to help secure the health and well-being of our workforce. Further information can be found on p. 14.

Lost time injuries

In 2020, we also experienced 70 lost time injuries (LTIs) involving employees (2019: 95) resulting in a lost time injury frequency rate (LTIFR) of 0.61 (2019: 0.83).¹

PLANNING FOR THE FUTURE

Kazakhstan

We are planning a range of measures to further improve our safety performance and reduce the risk of harm to our people. These include:

- **Strategy:** Finalisation of our 2021 Safety functional strategy, which will focus on embedding a safety first culture across our operations. This will be supported by the implementation of our enhanced safety management system, as well as the ongoing automation of our core safety processes and the rollout of an enhanced safety training programme
- **Risk assessment:** The development and rollout of multi-year management action plans to address the hazards identified through our HAZID risk assessments
- **Safety standards:** The development of new corporate safety standards and the enhancement of existing standards (where required). Areas of focus will include safety training, employee motivation, behavioural safety audits, road safety management and contractor management
- **Working at heights safety programme:** The ongoing implementation of the programme, including the expansion of our role-specific training programme, with a goal of training over 17,000 employees by 2022 – as well as the installation of enhanced safety equipment at Shubarkol Komir, the Vostochnyi coal pit (EEC), Donskoy GOK (Kazchrome) and Transcom
- **Transport safety:** The ongoing rollout of our satellite control, analytics and transport management system to all remaining operations in 2021

- **Enhanced PPE programme:** The ongoing rollout of the programme, including the provision of enhanced PPE across all higher risk roles, the automation of our systems for PPE distribution and quality monitoring, and the development of a new outsourcing model to support the procurement of high-quality PPE on a consistent basis
- **Personal health and well-being:** The expansion of employee medical services through our newly acquired medical centre, including the monitoring of individuals with COVID-19 and post-COVID rehabilitation (p. 14)

Some of the above measures were previously planned for implementation in 2020, but were delayed due to the operational impact of the COVID-19 pandemic.

Africa and Brazil

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

- Continuing to undertake biannual internal safety audits, with a focus on the ongoing enhancement of our SHS management system and fatal risk protocols
- Conducting an external audit of our safety management system at Metalkol RTR against the ISO 45001 management system standard, with a view to achieving certification in 2022
- Enhancing our Industrial Hygiene Programme at Metalkol RTR, including through the undertaking of vibration monitoring (in response to the findings of our risk assessments)

At our BAMIN iron ore operation in Brazil, we plan to continue strengthening our COVID-19 prevention controls – as well as our broader occupational health and hygiene management approach – through the implementation of an enhanced Occupational Health and Health Surveillance Programme.

COVID-19

In 2021, we will continue to assess the implications of COVID-19 in terms of how we manage the health and safety of our employees and contractors, their families and local communities – and take appropriate action. For further information on our response to COVID-19, please see p. 14.

¹ Employees only and including employee fatalities.



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.

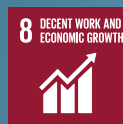
RELEVANT UN SUSTAINABLE DEVELOPMENT GOALS

UN SDG

ASSOCIATED UN TARGETS



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

We focus on embedding innovative ways of working throughout every level of our organisation. In line with our Values and our strategic priorities, we place particular emphasis on the development of our employees' strategic skills and competencies, as well as our high-potential individuals and leadership pipeline.

We take a comprehensive and forward-looking approach to talent management to ensure we have the right skills mix to meet the current and future needs of our business. These efforts are of increasing importance in the context of a shortage of young mining specialists (particularly in our operating regions), the ongoing transformation of our business, and the impact of technological change in reshaping mining professions.

In 2020, we significantly adapted our management approach in response to COVID-19. This included delivering many of our talent management and skills development programmes on a remote basis, as well as suspending several key initiatives.

KEY ISSUES AND INITIATIVES

Comprehensive talent management approach

Our Group-wide approach to talent management focuses on continuously building our current – and future – skills pipeline across a broad spectrum of age groups, levels of experience and disciplines. In support of this, we continued to enhance our skills development programmes, with a focus on embedding innovative ways of working at every level of our workforce. This included:

- The centralisation of our training functions as the first stage in the creation of our 'Corporate Digital University'. This aims to enhance the quality of our skills development programmes, including through the rollout of uniform training standards and methodologies, as well as the introduction of new online training modules
- The development of a corporate intranet that we plan to embed within our new digitised talent management system (see 'Planning for the future' on p. 43)

In addition, we have established strategic 'talent pools' to support the rapid development of our high-potential individuals, and to support our talent pipeline and succession planning. In 2020, we expanded the scope of the programme, which now focuses on the following categories:

- Executive leaders (i.e. Group-level and regional executive management)
- Functional leaders (i.e. function-level senior management)
- Operational leaders (i.e. site- and operation-level senior management)

We identify individuals for inclusion in these talent pools on an ongoing basis through our annual employee competency evaluation programme (see opposite), as well as through large-scale events, such as the League of Professionals and other leadership programmes. During the year, we identified a further 1,000 individuals across the three management categories for inclusion in the talent pools – and rolled out a dedicated training programme for our operational leaders.

Employee competency evaluation programme

During the year, we continued to roll out our structured employee competency evaluation programme, with more than 3,500 corporate-level and Kazakhstan-based employees assessed in 2020 (2019: more than 5,000 employees in Kazakhstan).

This programme aims to support:

- Enhanced employee engagement
- The development of tailored corporate and individual skills development programmes, and the addressing of gaps in key employee competencies
- The identification of individuals for inclusion in our talent pools
- Enhanced role rotation and career advancement

In addition, we transitioned the programme to a new digital platform to support the further automation of our objective-setting and assessment processes. We plan to develop this platform into a digitised talent management system (see 'Planning for the future' on p. 43).

Employee motivation and remuneration

We also 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 a structured performance assessment to 5,452 employees across a range of disciplines. The assessment informs the measurement of transparent, performance-linked bonuses, based on defined key performance indicators (KPIs), including corporate and individual targets. This builds on the successful rollout of the system to all corporate (i.e. non-production) personnel in Kazakhstan (totalling 11,452 employees) since 2018.

In 2020, we also assessed 1,200 employees in Kazakhstan against team-wide Objectives as part of a new Objectives and Key Results (OKR) assessment. We plan to expand the scope of this process across the Group in 2021.

THE ATLAS OF NEW PROFESSIONS IN KAZAKHSTAN

Global labour markets are undergoing rapid change. New industries and professions are emerging, while others are changing or becoming obsolete. This is being driven by digitalisation, automation, and demographic shifts – and will likely be accelerated by the impacts of COVID-19. As such, the forecasting of future labour market trends and potential skills gaps is becoming ever more important (and challenging) for governments, companies, educational institutions and young job seekers.

In this context, ERG is supporting the Government of the Republic of Kazakhstan in the development of the Atlas of New Professions, a critical strategic planning tool which we helped launch in 2019 at our Donskoy GOK operation (Kazchrome). The Atlas includes advanced forecasting of the most critical and in-demand professions over the next 10-15 years, and also helps to identify new technologies and management practices.¹

In 2020, ERG worked with the Ministry of Labour and Social Protection of the Population to complete a large-scale forecasting study using the Atlas methodology.² This focused on nine priority sectors of the national economy, including mining.³

Both the Government and educational institutions are already integrating the outputs of this initiative into their strategic planning. For example:

- The Ministry of Education and Science is using the outputs to inform a vocational guidance system for secondary schools. The Atlas will also inform the Ministry's efforts to update and modernise educational programmes at 15 regional universities
- The Ministry of Labour and Social Protection of the Population is using the outputs to update its five-year labour forecasting model

In addition, ERG is working with the local government in the Pavlodar region to develop new educational programmes for colleges and universities – and to help students identify promising new career paths through the EduNavigator.kz diagnostic platform. This is taking place through our Regional Memoranda framework (p. 56).

Over the long term, the Atlas will form a roadmap for adapting the education system to the needs of future labour markets, and will help will to provide valuable career guidance for parents, teachers and students. Finally, it will continue to guide ERG in the ongoing evolution of our recruitment and talent management strategies, and support our future skills pipeline.



¹ 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.

² The outputs from the study are hosted on an online Government portal: enbek.kz/atlas.

³ These sectors were identified as mining and metallurgy, oil and gas, agriculture, transport and logistics, engineering, information and communications technology, energy, tourism and construction.



People management in Kazakhstan

Talent attraction and development

In 2020, we continued to implement a comprehensive approach to the development of our current – and future – skills pipeline in Kazakhstan. Key initiatives included:

Schools:

- The hosting of 21 educational tours for 470 pupils under our Open Days with ERG initiative
- The delivery of 10 presentations to 230 school pupils to raise awareness around careers in mining

Colleges and universities:

- The provision of technical internships for around 1,059 students at ERG operations – 278 of whom were hired into full-time positions across a range of disciplines
- The launch of an online 'Career Clubs' to engage with over 1,100 high-potential university students on future career opportunities at ERG
- The hosting of vocational guidance events for over 2,500 students at colleges and universities across our operating regions
- The delivery of remote career talks to 1,128 students at colleges and universities to raise awareness around careers at ERG

In 2020, these initiatives also helped to identify 829 students for inclusion in our 'external talent pool' – which provides a framework for ERG to engage with high-potential external candidates regarding future employment opportunities.

Young professionals:

- The development and implementation of our new 'LIFT' project, which aims to form a 'talent pool' for our young professionals. In 2020, 84 high-potential young employees were selected to take part in the project
- The hosting of an online scientific and technical conference to support the professional development of 160 young professionals, and to promote the adoption of new technologies across the Group
- The ongoing implementation of an online debating initiative for young employees
- The hosting of two 'Youth Council' meetings, which support networking and development opportunities for young employees

Experienced professionals:

- The continued rollout of our League of Professionals programme to support the development of our production specialists, with 388 employees participating in a new online format in 2020
- The continued expansion of our performance-linked employee motivation system (p. 41)

In addition, we continued to deliver strategic training initiatives through our ERG Academy – with a focus on supporting cultural transformation within our business in Kazakhstan, as well as the implementation of our 2025 Strategy (p. 10). This was undertaken on a remote, e-learning basis due to COVID-19.

Differentiated pay rises

In 2020, we undertook extensive analysis of employee salaries across our operations in Kazakhstan, including the benchmarking of external salaries and consumer price trends. The outputs from this informed the implementation of differentiated pay rises for around 57,000 employees (effective from January 2021). This follows two consecutive rounds of differentiated pay rises for all production employees in 2018 and 2019.

People management in Africa and Brazil

Ongoing operational changes at our Africa assets – in addition to the operational impact of COVID-19 – resulted in the suspension of many of our skills development programmes in the region.

At Metalkol RTR in the DRC, our efforts were framed by the ramp-up of production – which saw an increase in full-time employees at the project. In this context, we continued to deliver technical skills assessments for our new and existing employees, as well as rolling out tailored training programmes to address identified skills gaps.

In Brazil, we continued to implement a performance evaluation programme across all organisational levels, including the rollout of individual professional development plans for all employees.

PERFORMANCE

In Kazakhstan, we invested around US\$4 million in training and skills development for our employees (2019: around US\$6.5 million). This includes mandatory training delivered under ERG's subsoil licensing obligations, as well as large-scale employee development events. The decrease in investment compared to the prior year primarily reflects the operational impact of the COVID-19 pandemic.

In Africa, we spent US\$223,000 on such efforts (2019: US\$304,000). Similarly, the decrease in investment compared to the prior year primarily reflects the impact of COVID-19.

PLANNING FOR THE FUTURE

We will continue to enhance and standardise our people management processes across the Group – with a focus on recruitment, talent management, employee planning, organisational design and remuneration.

This will include, amongst other initiatives:

- The development of our Corporate Digital University. This will focus on the rollout of enhanced e-learning modules for operations specialists, as well as training in project management, soft skills and leadership skills
- The development of our digitised talent management system. This aims to support the enhancement of our training processes and the automation of our competency assessments, while also helping to identify high-potential employees for rapid development. In addition, it will host personal development and career plans, as well as related training modules, as part of the Corporate Digital University

- The further expansion of our employee competency evaluation programme, with the aim of assessing more than 11,000 employees in 2021
- The further cascading of our employee motivation system to operational staff – as well as the introduction of new performance-linked bonuses for operations and administrative employees

In addition, we plan to cascade our strategic 'talent pools' framework to all management levels. This will help support the development of high-potential individuals across the Group.

At Metalkol RTR in the DRC, we continue to develop a range of new leadership, competency and technical training programmes to support the ongoing ramp-up of the operation.





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 SUSTAINABLE DEVELOPMENT GOALS

UN SDG

ASSOCIATED UN TARGETS



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

Workforce profile

66,701

At the end of 2020, we directly employed 66,701 people¹ – of which over 90% were located in Kazakhstan

25%

25% of the Group's employees are female

>90%

Over 90% of the Group's employees are trade union members

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).

Our Group-wide approach to employee relations is underpinned by constructive engagement with our employees' unions. ERG respects the right of all employees to join unions and to freely engage in collective bargaining. More than 90% of the Group's employees are trade union members, and collective bargaining agreements are in place at the majority of our operations.

We are fully committed to the principle of equal opportunity and the maintenance of a fair and non-discriminatory work environment. We treat our employees fairly, equally and without prejudice, irrespective of gender, race, age, disability or sexual orientation.

KEY ISSUES AND INITIATIVES

Employee relations in Kazakhstan

Our comprehensive approach to employee relations means we focus on the provision 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 the physical working conditions of our employees, and the enhancement of our employee benefits
- The raising of living standards for our employees and their families

We use the findings from comprehensive socio-economic surveys in our operating regions to prioritise actions in these areas. During the year, this included two large-scale engagement surveys involving more than 6,000 employees, which identified an increase in workplace satisfaction between March and December 2020. These surveys help to ensure we remain responsive to the views of our employees on a range of issues, including working conditions (see opposite).

Number of employees by region

Region	2020	2019
Kazakhstan	62,892	63,194
Africa	3,462	3,709
Brazil	86	98
Corporate offices ²	261	271

¹ i.e. employees holding a written contract of employment with ERG as at 31 December 2020. This figure does not include contractors.

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



Delivering comfortable workplaces

In 2020, we continued to enhance workplace conditions in Kazakhstan, with the aim of ensuring our operations are all raised up to a common standard. This included:

- **Onsite facilities:** Investment of around US\$10.5 million in the renovation of onsite facilities across all of our operations (e.g. bathrooms, dormitories, medical centres, rooms for shift meetings, etc.). Key initiatives included:
 - An investment of US\$2.6 million for the construction of enhanced onsite facilities at Krasnooktyabrsk Bauxite Mine (Aluminium of Kazakhstan)
 - The launch of a pilot project to create a centralised database of onsite facilities – with the aim of enhancing planning and resource allocation for future renovation works
- **Catering:** Investment of around US\$630,000 in the renovation of six canteens
- **Transportation:** The continued rollout of our transport standardisation programme. Key initiatives included:
 - The staged modernisation of ERG-owned and contracted transport, including the purchase of 12 new buses (2019: 14)
 - The ongoing implementation of our ERG Bus service (through the SmartERG app)³ to provide up-to-date journey information and facilitate employee feedback on service standards

Finally, in 2020 we undertook two additional employee surveys to gauge levels of satisfaction with our workplace standardisation programmes. This found generally high levels of satisfaction regarding onsite facilities, transport and catering.

Raising living standards

In 2020, we continued to raise living standards for our employees and their families in our operating regions. This included:

- **Housing:** The construction of four multi-storey apartment complexes for employees in the Pavlodar region under our Affordable Housing Programme – as well as the purchase of 41 apartments which will be provided to employees (on preferential financial terms under the Programme) in the Karaganda region. Around 840 employees and their families have benefited from the programme since 2015, including 93 employees and their families in 2020. In addition, we helped a further nine employees to purchase apartments under the ‘Bakytty Otbasy’⁴ national housing programme (including the provision of a 10% down payment through an ERG microfinance company)
- **Social infrastructure:** Investment in social infrastructure across our operating regions, including health centres, sports facilities, and cultural and recreational areas (p. 58). These facilities are available to our employees and their families, with discounts provided for retired workers and disadvantaged and/or large families
- **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. 56)

Managing closure at Arkalyk

During the year, we continued to actively manage the impacts of the 2021 closure of our Torgayskoe Mining Unit (Aluminium of Kazakhstan) in the mining town of Arkalyk (Kostanay region). The closure resulted in 127 employees being transferred to new roles at SSGPO, Aluminium of Kazakhstan and Shubarkol Komir. Their terms of employment (including remuneration) remained unchanged, and retraining has been provided as required.

In addition, the closure resulted in the retrenchment of 418 employees. Our efforts to support these individuals included:

- **Support for small- and medium-sized enterprises:** Implementing a joint programme with the National Chamber of Entrepreneurs of Kazakhstan ‘Atameken’ to help former employees establish new businesses in Arkalyk. Under the programme, we helped one former employee to set up a mechanical repairs business in 2019, including through the provision of training. His business now employs 87 of his former colleagues and provides services to several ERG operations
- **External employment opportunities:** Working with local governments in Arkalyk and the Kostanay region, as well as the National Chamber of Entrepreneurs of Kazakhstan, to identify and help secure alternative external employment opportunities

In addition, we paid redundancy payments to eligible employees and provided financial support for retrenched employees who were nearing retirement age (i.e. payment of their salaries up to the age of retirement).

³ SmartERG is an internally developed mobile application which supports a range of employee services.

⁴ ‘Bakytty Otbasy’ means ‘Happy Family’ in Kazakh.

Managing organisational transformation

Our ongoing organisational transformation process is vital for securing the long-term sustainability of our business (p. 32). This includes our efforts to streamline administrative structures and processes, which will ultimately improve the organisational efficiency of our operations on a Group-wide basis.

In addition, this has resulted in a total of 424 administrative employees in Kazakhstan being transferred to new roles within the business. Regrettably, it also resulted in the retrenchment of 558 employees, who were provided with the following support (in addition to the provision of redundancy pay):

- Online vocational training and practical guidance to support their efforts to find employment outside of ERG
- The ongoing provision of housing on preferential terms (where individuals were already participating in such programmes)

In addition, we will prioritise these individuals when future vacancies arise (subject to the meeting of requisite skills and experience requirements).

Supporting employee well-being

In 2020, we significantly adapted our approach to employee well-being due to the impact of COVID-19. All planned corporate sports events under our Health, Sports and Well-being Center programme were cancelled from March, while employee gym facilities remained closed throughout the year. In addition, we temporarily suspended our sports infrastructure modernisation and standardisation programme – with funding redirected to support our COVID-19 prevention measures (p. 14).

In this context, we implemented a range of new measures to support employee well-being during these challenging times. This included:

- The provision of remote online workouts, outdoor sports competitions and online chess tournaments
- The hosting of a teams-based online programme which enables participants to access advice from nutritionists and fitness professionals
- The provision of online psychological counselling

Employee relations in Africa

At Metalkol RTR in the DRC, we continued to expand our full-time operational workforce to support the ongoing ramp-up of the operation. This contributed to an increase in the proportion of DRC nationals employed on a full-time basis. We continue to make good progress towards relevant targets for the employment of DRC nationals.

In this context, we also continued to implement a comprehensive succession/ localisation plan and induction process at Metalkol RTR, with a focus on the development of a common corporate culture and the embedding of safe behaviours.

At our other assets in Africa, employee relations continued to be framed by the following operational changes/contexts:

- **Boss Mining:** The operation was placed into care and maintenance in 2019
- **Comide:** The operation was placed into care and maintenance in 2017
- **CCC:** The operation was scaled back in 2019, following the placement of Boss Mining into care and maintenance
- **Chambishi Metals:** The operation was placed into care and maintenance in 2020
- **Johannesburg head office:** The restructuring of the office continued in the context of the above-noted operational changes

All operational changes were conducted in full compliance with local labour laws, as well as our collective bargaining agreements.

Finally, we continue to actively engage with unions through the statutory collective bargaining framework at our operations in the DRC, regarding conditions of employment. At Metalkol RTR, for example, we engaged with union representatives to review the framework for employee benefits. This process was completed in January 2021 and resulted in an agreement to increase employee annual leave and to provide medical care for the parents of employees.

Employee relations in Brazil

At our BAMIN iron ore operation, we bolstered our project team to support the initiation of commercial production at our Pedra de Ferro mine (p. 27). This included the hiring of new production specialists, as well as the redeployment of some existing employees and contractors into more production-orientated roles. In support of this, we continued to embed our existing human resources management systems and succession planning processes.

In addition, we began the rollout of a new diversity programme – supported by our employee-led Diversity Committee. This included the hosting of internal engagement sessions to raise awareness around our diversity and inclusion policies and procedures.

PERFORMANCE

During 2020:

- 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

In addition, we did not experience any industrial action or strikes in Kazakhstan. This reflects the consistent and constructive relations we maintain with our employees' labour unions, as well as our commitment to address the social challenges faced by employees. Similarly, we did not experience any strike action in Africa or Brazil in 2020.



PLANNING FOR THE FUTURE

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

- **Housing:** The launch of a new housing programme aimed at helping young employees as well as those in critical roles to purchase homes
- **Onsite facilities:** An investment of US\$15.7 million to improve onsite facilities, including the construction of a new dormitory and canteen at the Krasnooktyabrsk Bauxite Mine (Aluminium of Kazakhstan)
- **Catering:** The establishment of a single centralised service provider for our canteens, with the aim of delivering consistently high standards across our operations
- **Enhanced communication:** The ongoing development of mobile apps (as part of our SmartERG application) to provide digital platforms for employee feedback regarding onsite conditions
- **Sports and well-being:** The phased resumption of our employee sports and well-being programmes (subject to the status of the COVID-19 pandemic), including the relaunch of our sports infrastructure modernisation programme

At Metalkol RTR in the DRC, we plan to enhance our recruitment procedures to ensure our ongoing alignment to regulatory requirements and to further support localisation. This will include the posting of new job vacancies within local communities and the recruitment of local hires where feasible.

In Brazil, we plan to expand our employee diversity programme. This will include the development of enhanced diversity and inclusion policies and procedures, additional training and awareness raising, and targeted efforts to increase female and ethnic minority representation at management-level.

COMM

©Photo courtesy of the Good Shepherd International Foundation/Nyokabi Kahura.

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, while our local communities in the DRC and Brazil face material socio-economic challenges.

At the same time, we actively manage both our positive and negative impacts on local communities. In addition, we seek to address the negative impacts that can be associated with some forms of artisanal and small-scale mining (ASM) in the DRC. This includes a focus on alternative livelihood programmes and the transitioning of children and young people out of ASM activity.

Finally, COVID-19 continues to have significant health and socio-economic implications for communities near to our operations. Unfortunately, some of our existing community engagement and CSI programmes have also been disrupted by the pandemic. Nonetheless, we have implemented a range of measures to help communities cope with the immediate impacts of the pandemic (p. 14), and adapted many of our existing programmes.

MATERIAL ISSUES INCLUDE:



COMMUNITY IMPACTS

[READ MORE ON P. 50](#)



COMMUNITY SOCIAL INVESTMENT

[READ MORE ON P. 54](#)



UNITY

development and well-being

2020 HIGHLIGHTS

\$65 million Group community social investment

Supported local communities in responding to COVID-19, as well as regional and national response efforts (p. 57)

Continued to implement a range of feedback mechanisms in Kazakhstan and Africa to help local communities shape their own development priorities



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, as well as support for entrepreneurship and the development of the business environment in our host countries.

RELEVANT UN SUSTAINABLE DEVELOPMENT GOALS

UN SDG

ASSOCIATED UN TARGETS



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



11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage



12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle

We are committed to minimising the negative impacts of our activities, where these cannot be avoided. In addition, and in line with our Values, we respect cultural and regional traditions where we operate. This is not only the right thing to do; it also directly supports our social licence to operate.

At the same time, we seek to maximise our positive impacts – ranging from job creation to local procurement (p. 81). Our approach is underpinned by transparent and structured engagement to help ensure we remain responsive to the concerns and priorities of local communities.

KEY ISSUES AND INITIATIVES

Managing our impacts – Kazakhstan

In Kazakhstan, we manage our key community impacts through our international standard environmental management systems. These are strongly focused on the detection, prevention and/or minimisation of harmful discharges to local water systems and to the air (p. 66).

We also conduct comprehensive impact assessments and community consultations whenever undertaking any major developments or operational changes. These are conducted in line with national legal requirements and relevant international standards. In 2020, we held a range of public consultations related to operational changes, including:

- Changes in production volumes at the Keregetasskoye mine (Aluminium of Kazakhstan), the Vostochny coal pit (EEC) and the Zapadny coal pit (Shubarkol Komir)
- Construction of a new sludge processing plant at Donskoy GOK (Kazchrome)
- Post-mining land reclamation at open pit No. 6 of the Vostochno-Ayatskoye field (Aluminium of Kazakhstan)

In addition, local communities can raise grievances through our publicly available Group Hotline (see <http://erg.ethicspoint.com>).

Finally, we carry out large-scale surveys of community members (including ERG employees) and undertake benchmarking of socio-economic conditions in our mining towns. These efforts help us proactively identify stakeholder priorities, and have directly informed our regional development programme (p. 44).

OUR RESPONSE TO COVID-19

Supporting local efforts

We continued to implement a range of measures across our global operations to support local communities (and beyond) in responding to the pandemic.

For further details, please see p. 14.

Managing our impacts – 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.

In addition, we apply a community grievance procedure across our Africa operations, which supports the continuous, timely identification, review and management of our actual and potential impacts. Our site-based grievance mechanisms are integrated into IsoMetrix to enhance oversight and management of community grievances. Local communities are made aware of the 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’.

Finally, we continue to address community impacts in the DRC relating to a legacy complaint made against ENRC in 2013.¹ While the complaint relates to legacy issues near our Comide concession, we remain committed to responding to the concerns of our local communities. In 2020, our response was disrupted due to the operational impact of COVID-19. As such, most of our activities took place towards the end of the year. This included the ongoing implementation of our Sustainable Agricultural Programme at Comide (p. 60), as well as the provision of financial management training for community-based voluntary savings groups. In addition, solar-powered water installations that were previously funded by ERG, are now being managed by community-led water committees in Kisankala, Lenge and Kisanfu.

Addressing ASM activity at our operations

While artisanal and small-scale mining (ASM) production is absent from our product (p. 90), ASM activity is present in the vicinity of all our active mining areas in the DRC (with the exception of Frontier).

In this context, our SHS management system supports our management of ASM activity at our operations. This includes dedicated policies, procedures and management plans for human rights and ASM. In support of this, we maintain ongoing and constructive dialogue with local communities (including those engaged in ASM), the government and other mining companies. Any potential grievances are managed through our above-mentioned community grievance procedure.

In addition, we have established a dedicated ASM policy and ASM Management Plan, which outline our approach to managing ASM activities on and around our concessions. 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.

For information on our support for initiatives that help to address the socio-economic drivers behind ASM and improve the lives of communities near Metalkol RTR, please see ‘Community Social Investment’ on p. 61.

Environmental and Social Impact Assessments (ESIAs)

During the year, we continued to develop and implement social and environmental management programmes identified through our ESIAs in the DRC.

Some ESIA-related activities were disrupted due to ongoing operational change, as well as the impact of COVID-19. Nonetheless, activities undertaken during the year included:

- The provision of training and support for community-led water committees, which manage potable water distribution facilities that ERG helped to fund near Comide (p. 61)
- The provision of training and support for community-based voluntary savings groups, which provide micro-financing for local development projects at Boss Mining, Comide and Frontier
- The continued implementation of our Sustainable Agricultural Programme at Comide and Boss Mining (p. 60)

At Metalkol RTR, we updated our ESIA (as required under our licensing renewal obligations). This was submitted for regulatory approval in early 2021. In addition, we updated our ESIA at Comide, which was also submitted for regulatory approval in 2021. This was a more limited exercise than those undertaken previously, as the operation was placed into care and maintenance in 2017.²



¹ The 2013 complaint was originally made by Rights and Accountability in Development (RAID), a UK-based non-governmental organisation, 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 In addition, the updated ESIA for Frontier was accepted by regulators in 2018, while the updated ESIA for Boss Mining was accepted in 2017.



Resettlement at Metalkol RTR

At Metalkol RTR, we continued to support 16 resettled families from the Samukonga community. The families were successfully resettled into a new village in the Kamimbi II community in 2018 – in line with local law and the IFC Performance Standards.¹

During the year, we provided ongoing maintenance services for water supply systems, solar power systems and general housing stock. Nonetheless, other activities were disrupted due to COVID-19, as well as related procurement challenges. This resulted in a delay to the planned rollout of a livelihood restoration programme, as well as to monthly deliveries of supplementary food supplies.² The deliveries have since resumed and will continue until the livelihood restoration programme has been fully established.

We also undertook a second Participatory Rural Appraisal (PRA) with the Kamimbi II community as part of our ongoing efforts to establish their development priorities and ensure they are not negatively impacted by the resettlement. We plan to support the community in addressing these priorities through projects that will be implemented under our legally binding community investment framework (or ‘Commitments Register’, p. 59).

Community compensation

In 2020, we paid compensation of approximately US\$11,000 to nearby communities at Metalkol RTR. This included payments to 16 farmers whose agricultural land had been affected by historical water discharges from our Metalkol RTR operation. In addition, we paid compensation to 11 farmers whose land had been impacted by the construction of the new tailings storage facility.

Managing our impacts – Brazil

At our BAMIN iron ore operation in Brazil, we continued to focus on building strong and transparent relationships with local communities. This included the ongoing implementation of our comprehensive community engagement programme, under which we:

- Continued to host a multi-stakeholder working group, which meets on a quarterly basis to discuss potential challenges relating to project development
- Delivered communications and awareness raising initiatives, with a focus on addressing community concerns relating to the development of the Porto Sul terminal. This included the establishment of a new social communication office within the community of Vila Juerana (under our licensing obligations) to support proactive engagement and grievance resolution
- Hosted environmental awareness raising activities for local communities and employees

¹ 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.

² The families own and operate small farm holdings, which continued producing food during this period.

The development of the Porto Sul terminal also meant we continued to focus on preventing potential negative project impacts on artisanal fishing (which is the most significant source of income for local communities around the port). Under our licensing obligations, we have supported a comprehensive joint fishing monitoring programme since 2013, and we are engaging with local fishing communities regarding a compensation programme for anticipated project impacts.

We also helped to support external efforts aimed at preventing sexual exploitation associated with prostitution in the communities surrounding the project. This included partnering with local authorities to better understand the risk exposure of vulnerable populations, as well as related awareness raising activities.

In addition, we continued to implement the recommendations of our ESIA (which was completed and accepted by the government in 2014). This includes the implementation of programmes to monitor air quality, as well as water quality and availability. We also continued to implement a programme to improve agricultural production for 15 families from the nearby Fazenda Lapa community, who were resettled in 2011. During the year, we monitored water usage at the programme to help manage water availability.

Finally, we operate a toll-free and widely publicised phone line to enable local community members to raise complaints.

PERFORMANCE

In Kazakhstan, we conducted 25 public consultations related to project changes (p. 50). No significant grievances were raised during these hearings or through any of the available community relations channels.

In Africa, 17 complaints were raised via our grievance mechanisms (2019: 104), 16 of which have been resolved in 2020. These related to, for example, interactions between public security personnel and local communities, project-related health concerns and local employment opportunities. This also included a complaint from residents of the Samukonga village due to the delay in deliveries of food provisions, which have since resumed (p. 52). The significant decrease in grievances versus the prior year primarily reflects the impact of COVID-related restrictions on our ability to engage with, and gather feedback from, local communities.

Finally, we received 22 complaints via our dedicated community telephone line at our BAMIN iron ore operation in Brazil – all of which have been resolved. These included complaints relating to, for example, local employment and training opportunities, dust emissions, impact on local traffic and concerns around water availability (based on misconceptions that the project will use water from local sources).

PLANNING FOR THE FUTURE

In 2021, we plan to conduct a range of public consultations in Kazakhstan, including in relation to operational activity at KAS, Shubarkol Komir, SSGPO, EEC and Kazchrome.

At Metalkol RTR, Boss Mining and Comide in the DRC, we plan to continue training public and private security personnel on the application of the Voluntary Principles on Security and Human Rights. In addition, we plan to work with the University of Lubumbashi on an agricultural survey to support the livelihood restoration programme at the Samukonga resettlement village.

At BAMIN in Brazil, we will continue to evolve our stakeholder engagement programmes in line with increasing levels of activity at the operation.





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.

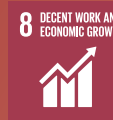
RELEVANT UN SUSTAINABLE DEVELOPMENT GOALS

UN SDG	ASSOCIATED UN TARGETS
	1.1 By 2030, eradicate extreme poverty for all people everywhere 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.B 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

8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour

8.8 Protect labour rights and promote safe and secure working environments for all workers



10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status



11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums



16.1 Significantly reduce all forms of violence and related death rates everywhere

16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children

In 2020, we refocused many of our community social investment (CSI) efforts on helping local communities to cope with the immediate impacts of the COVID-19 pandemic (p. 14).

At the same time, our CSI strategy in Kazakhstan continues to be driven by our long-standing relationships with local communities. We place particular emphasis on improving the lives of our employees and their families outside of the workplace (i.e. as local community members), as well as on supporting broader socio-economic development and diversification in our operating regions.

In Africa, we focus our CSI efforts on addressing the most material development challenges facing communities in our operating regions, many of whom live in conditions of extreme poverty. In 2020, ongoing operational changes, as well as the impact of COVID-19, continued to disrupt some of our community investment activities in the region.

Finally, we place significant emphasis on addressing the socio-economic drivers behind, and negative impacts of, child labour that can be associated with some forms of artisanal and small-scale mining. This includes a focus on alternative livelihood programmes and the transitioning of children and young people out of ASM activity.

KEY ISSUES AND INITIATIVES – KAZAKHSTAN¹

Collaborative regional development

In 2020, we continued to roll out our three-year programme to support long-term socio-economic development in our operating regions. This is being implemented through partnerships with government at the national and regional levels, including through our regional memoranda of understanding (Regional MoUs).

The programme is based on in-depth analysis of the specific development needs of each operating region, identified through a series of comprehensive large-scale social surveys held annually. In 2020, we carried out additional surveys in four mining towns and two local villages to help ensure the strategy is aligned to local priorities. This included detailed analysis of local development priorities, as well as levels of satisfaction (and areas for improvement) with respect to ERG's existing CSI projects.

These workstreams have identified the following priorities:

- **Improving living standards** (including housing and utilities infrastructure, public transport and urban spaces)
- **Education and youth skills development**
- **Healthcare** (including the modernisation of medical institutions and the provision of advanced training for doctors)
- **The 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 below content 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).

ERG TOWN PROGRAMME

In 2020, we continued the rollout of our ERG Town programme in Kazakhstan. This aims to give employees – and, over the longer term, community members – the opportunity to shape local development priorities in our Karaganda, Aktobe, Kostanay and Pavlodar operating regions.

ERG Town includes an annual competition in which employees submit ideas for new social investment projects. Winning submissions are selected by local stakeholders, including government representatives, and these projects are then funded through our Regional MoUs.

Examples of winning projects include:

- The provision of health screening equipment for a public hospital in the city of Lisakovsk, Kostanay region
- The renovation of a learning centre to support children with special educational needs in the Aktobe region, including funding for building repairs and equipment
- The launch of a public market in the Pavlodar region to enable local communities to sell surplus fruit and vegetables from their private allotments

These projects will be funded through our Regional MoUs in 2021. In addition, we plan to directly fund the development of a new leisure centre for employees at Shubarkol Komir in the Karaganda region.

¹ Please note, 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. 45.

Improving living standards

We place particular emphasis on improving living standards in our mining towns and our broader operating regions. Over the long term, we aim to support the development of our mining towns into comfortable urban environments where multiple generations (including the children of our employees) will choose to live and work.

Relevant projects implemented through our Regional MoUs included:

- The provision of financing for a sports and recreation complex in the Aktobe region, including for utilities and maintenance costs (US\$1.2 million)
- The provision of lower cost heating for residents in the Kostanay region (US\$1.2 million)
- The installation of water heating systems in the Pavlodar region (US\$84,000)

In addition, we invested US\$545,000 through our Regional MoUs in the development of an integrated digital platform to support long-term socio-economic development in the Pavlodar region. The system aims to help local authorities to better track – and respond to – key development indicators. It is scheduled for completion in 2021.

Education and youth skills development

We invest in local educational programmes to support future-orientated youth employment and regional economic diversification. These efforts are vital for the development of ERG's own future skills pipeline, and provide assurance to current and future employees that their children can look forward to promising futures in their home towns.

In this context, we support a range of vocational educational institutions (and their students) through our Regional MoUs. In 2020, this included investment in:

- The Khromtau Mining and Technical College, including additional financial support for teachers, as well as the purchase of training materials and equipment (US\$57,000)
- The Rudny Industrial Institute, including the purchase of training materials and specialist training software (US\$71,000)

Education will remain an area of focus under our regional development programme (p. 55). For example, we plan to provide financial support to a range of vocational educational institutions in our operating regions in 2021. This will include support for advanced teacher training programmes.

Our approach to CSI in Kazakhstan

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 systematic process framework

IMPLEMENTATION MECHANISMS

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

\$42.3M

Direct social investment in 2020

Regional development programme

This supports long-term socio-economic development in our operating regions (p. 55)

Regional memoranda of understanding (Regional MoUs)
Negotiated strategic partnerships with regional authorities

\$17.4M

Regional MoUs in 2020

FEEDBACK MECHANISMS

Community Town

A pilot project to give local communities in our mining towns a role in defining their own development priorities (p. 59)

ERG Town

A programme to give employees – and, over the longer term, community members – the opportunity to shape local development priorities (p. 55)

PARTNERS

Government of the Republic of Kazakhstan

Local governments

Civil society

In addition, we place particular emphasis on youth-focused skills development to generate alternative economic opportunities (i.e. outside of our operations) for future generations. In 2020, this included our ongoing support for the Student Entrepreneurship Ecosystem (p. 58) and the Atlas of New Professions (p. 41). We also continued to support Tikkun Olam Makers (TOM), including sponsoring the tenth 'Makeathon' event in Nur-Sultan.¹

Healthcare

We finance modern healthcare infrastructure to support the well-being of our current and retired employees, their families and the wider communities in our operating regions. In 2020, the majority of our efforts focused on supporting the fight against COVID-19. This included funding the following initiatives through our Regional MoUs:

- The purchase of modern testing and treatment equipment for local hospitals, the provision of PPE for frontline staff and the funding of healthcare support for disadvantaged families in the Kostanay region (US\$1.6 million)
- The purchase of ventilators and pulse oximeters for hospitals in the Pavlodar region (US\$1.4 million)
- The purchase of face masks, testing equipment and treatment medicines to support the public response in the Aktobe region (US\$996,000)
- Support for doctors in the Kostanay region, including the provision of funding for extra doctors from Russia to help support efforts in the region (US\$101,000)

We also donated more than US\$10 million for the creation of a national foundation in Kazakhstan, which helped to provide financial and healthcare support for disadvantaged and socially vulnerable groups impacted by the pandemic. For further information on our healthcare response to COVID-19, please see p. 14.

In addition to our COVID-focused initiatives, we invested a further US\$404,000 through our Regional MoUs as part of the second phase of a project to upgrade medical equipment at a hospital in Khromtau, Aktobe region.

Finally, outside of our Regional MoUs, we provided direct investment of US\$82,000 to equip and enhance a specialist burns trauma unit at a hospital in Nur-Sultan.

FOCUS AREAS AND TARGET CONSTITUENTS

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)

Legacy development

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 actively target part of our CSI spending on improving the living standards of our employees and their families outside of work

Large-scale annual surveys

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

Local
communities

Employees and
their representatives

OUR AREAS OF IMPACT

- National response to COVID-19 (see above)
- National infrastructure

- Regional response to COVID-19 (see above)
- Living standards (see opposite)
- Education and youth skills development (see opposite)
- Healthcare (see above)
- Sports and well-being (p. 58)
- Socially vulnerable and disadvantaged groups (p. 58)

- The social needs of our employees and their families (p. 45)

¹ Tikkun Olam Makers (TOM): tomglobal.org. TOM events help young inventors develop commercially viable technologies to support people with disabilities.

STUDENT ENTREPRENEURSHIP ECOSYSTEM

One of the most pressing challenges facing Kazakhstan is how to generate sustainable employment opportunities for a growing youth demographic. This is a particular issue in our remote operating regions, as many young people choose to seek opportunities in major domestic cities or abroad.

In this context, we continue to support the Student Entrepreneurship Ecosystem (ecosystemerg.kz). The 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.

It is being implemented in partnership with the Tel-Aviv University Friends Association in Kazakhstan and the Almaty Management University (AlmaU).

In 2020, we invested a further US\$38,000 to support a global online training programme for teachers/lecturers and students, as well as several online student skills competitions focused on start-up creation and incubation. In addition, we continue to work closely with universities to support the implementation of their transformation strategies and to help enhance their study programmes. We also offer our facilities for student-led research and development, and engage senior business experts to mentor students on the commercialisation of their ideas.

In 2020, more than 1,400 students and 500 teachers took part in online training under the Student Entrepreneurship Ecosystem. In addition, the programme contributed to the launch of several successful business ventures, including two mobile app development companies.



Sports and well-being

True community well-being is about more than narrow economic development. In recognition of this, we make strategic investments in sports initiatives across our operating regions. In 2020, this included a US\$1.4 million investment through our Regional MoUs in the development of a table tennis centre in the Karaganda region.

This project forms part of our broader efforts to transfer our sports and well-being initiatives away from the sponsorship of professional sports teams and towards mass participation sports, community sports infrastructure and youth sports.

In addition, we continue to place particular emphasis on increasing employee involvement in sports and helping to improve lifestyle choices (p. 46).

Socially vulnerable and disadvantaged groups

Outside of our Regional MoUs, we also invest in initiatives to help socially vulnerable and disadvantaged groups in our operating regions. In 2020, this included continued sponsorship of the SOS Children's Villages of Kazakhstan organisation to support children without parental care and families at risk (US\$31,000). In addition, we continued to sponsor 'Ana uyi',¹ a foundation that provides shelter, health essentials, vocational training and counselling for disadvantaged mothers in the Pavlodar region (US\$29,000).

¹ 'Ana uyi' means 'Mother's House' in Kazakh.

COMMUNITY TOWN INITIATIVE

In 2020, we invested US\$158,000 to launch a pilot project in partnership with the local government in the city of Khromtau (Aktobe region) for our new Community Town Initiative.² This aims to give communities in our mining towns a key role in defining their own development priorities, as well as helping to inform ERG's efforts to support local socio-economic development. It is based on the long-established and increasingly influential concept of 'participatory budgeting' that seeks to enhance cooperation between governments and citizens to address key development challenges.

Under the initiative, all local residents can submit ideas for new social investment projects via an online portal. ERG also provides ongoing support through a dedicated project centre to help participants formulate, develop and present their ideas. A panel made up of local government representatives, ERG employees and local residents provides an initial assessment of the submissions. The final winning projects are decided by local residents via an online public vote.

A total of 13 winning submissions will be implemented in 2021, with 10 of these funded by ERG through our Regional MoUs and three funded by local authorities. The 10 projects that we will fund focus on improving urban spaces in Khromtau. They include the construction and installation of several children's playgrounds, public sports and exercise equipment, street lighting and a car park.



KEY ISSUES AND INITIATIVES – AFRICA

In Africa, our CSI approach is focused on addressing the most material development challenges facing communities in our operating regions. A key component of this is our support for external initiatives that help address the socio-economic drivers behind, and negative impacts of, child labour that can be associated with some forms of artisanal and small-scale mining.

In 2020, we continued to manage operational change in our Africa region (p. 46), as well as the ongoing impact of COVID-19. This has resulted in disruption to some of our CSI programmes. Where feasible, we continued to support certain CSI projects – with priority given to higher impact agricultural and community capacity-building programmes.

New 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. This will be managed by a government-appointed, multi-stakeholder body made up of representatives from the government, impacted communities, civil society and the mining companies themselves.

Separately, the Code requires the establishment of a legally binding framework for community social investment (or a 'Commitments Register').³ This is based on formal consultation with relevant stakeholders to identify local development priorities. Progress made against these commitments is subject to independent monitoring on an annual basis.

² In 2021, the project was renamed from the 'Participation Budget' due to its similarity with the government-run 'Public Participation Budget'.

³ This requirement is triggered, for example, when an operation's Environmental and Social Impact Assessment (ESIA) is updated.



At Metalkol RTR, we concluded formal consultations with relevant stakeholders in 2020, and all parties signed our new Commitments Register. This includes a three-year commitment of US\$3 million from ERG to support projects in the following priority areas:

- Food crop and vegetable production, as well as livestock and fish farming
- The installation of boreholes and solar-powered pumps, as well as capacity building for community-led water management committees
- The construction of a local school for primary and secondary age children, as well as the provision of equipment and learning materials for an existing school
- The construction of an adult literacy and vocational training centre, as well as the provision of sewing equipment and other learning materials
- The construction of local vocational training facilities, including mechanical-electrical workshops and laboratories
- The construction of a health centre, as well as the provision of basic equipment and medication

Implementation of these projects will commence in 2021.

The identified priorities are aligned with those already established through our existing Participatory Rural Appraisals (PRAs)¹ and Environmental and Social Impact Assessments (ESIAs) – the results of which were integrated into the process. Indeed, many of these are already being addressed under existing Community Action Plans (CAPs), which are managed by community-led committees.

Finally, we plan to establish a Commitments Register at Frontier during 2022/2023 (in parallel with the next scheduled update of our ESIA).

Alternative livelihoods and food security

At our operations in the DRC, we support alternative livelihoods – with a focus on sustainable agriculture. These efforts aim to address food insecurity, a lack of formal employment opportunities and the potentially negative impacts that can be associated with some forms of ASM activity.

This includes our support for alternative livelihood programmes through our partnerships with the Good Shepherd International Foundation and Pact² non-governmental development organisations (p. 61-62).

In 2020, we invested US\$299,000 in the ongoing implementation of a Sustainable Agricultural Programme on land located near our Comide and Boss Mining operations. We launched the programme in 2018 to help support sustainable agricultural productivity through the provision of technical support, seeds and equipment to farm maize.

In addition, we launched a pilot agricultural project at Metalkol RTR to support the nearby Kashala community. This included funding the purchase of maize seed, fertiliser and tools. Once fully operational, the project is anticipated to produce around 65 tonnes of maize over a three-year period to improve food security for 20 local households. We also launched a new agricultural programme to support communities near our Frontier operation, with the first crops harvested in 2021.

¹ We successfully completed PRAs with 19 local communities in the DRC in 2017. The process helps local communities to identify their own development priorities – and supports them in the delivery of CAPs to address these needs.

² ERG's partnership with Pact ended in September 2020.

In the context of limited local employment opportunities, we also offered short-term employment (i.e. on a day rate or short-term contract basis) to more than 500 people from communities surrounding Metalkol RTR (2019: more than 1,000). The decrease from the prior year reflects the operational impact of COVID-19, as well as the completion of the plant construction phase.

Improving educational access

Access to adequate formal education is an acute challenge for local communities in the DRC. Despite Boss Mining being in care and maintenance, we continued to fund educational initiatives in Kakanda (albeit in a reduced capacity). This included an investment of US\$1.9 million to support more than 3,400 students (2019: 4,900) and 150 teachers (2019: 150).

In addition, we invested US\$165,000 in the construction of a new primary school for the local community in Lenge near Comide in the DRC. This is scheduled for completion in 2021.

Finally, under our partnership with the Good Shepherd International Foundation, we continue to fund a range of educational initiatives focused on helping children and young people to transition out of ASM activity.

Clean water distribution

At Metalkol RTR, we also focus on improving clean water infrastructure for our local communities.³ In 2020, we invested US\$4,800 to fund maintenance work on wells and solar-powered water distribution facilities, which were installed in 2018 under our potable water programme. Programme facilities are managed by community-led water committees, with community members paying a small fee that is reinvested into ongoing maintenance. Drilling work to expand the scope of the programme was delayed due to COVID-19, but is planned to start in 2021 (see 'Planning for the future' on p. 63).

At our Frontier operation, we are partnering with the local authorities to help deliver clean water to the nearby (and growing) town of Sakania. This will include funding the construction of new boreholes, as well as a network of pipes to transport the clean water to the town.

In line with the requirements of our ESIA's, we also continued to fund capacity building for community-led water committees at our other operations in the DRC. This included investment of US\$41,000 at Boss Mining and US\$24,000 at Comide. These committees manage facilities that were constructed using ERG funding.

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, and HIV/AIDS and tuberculosis programmes.

In 2020, we also implemented measures to support the local healthcare response to COVID-19 near our operations. This included the provision of tests for frontline staff at two local hospitals near Frontier (using ERG testing equipment). For more information on these and other measures implemented to support the broader response to the pandemic, please see p. 14.

Artisanal and small-scale mining

In line with the commitments of our Clean Cobalt Framework (p. 90), none of our production comes from artisanal and small-scale mining (ASM). At the same time, we acknowledge the important role that ASM plays in supporting much-needed livelihoods in the DRC. This need is driven by structural conditions in the country, including inadequate access to education and related employment opportunities. COVID-19 has further exacerbated the situation, with higher numbers of local children missing school (and thus at greater risk of exposure to ASM activity).

In this context, we support a range of external initiatives to help improve the lives of local communities near Metalkol RTR. This includes a focus on helping children and young people to transition out of artisanal mining, as well as strengthening the capacity of local communities to address this important challenge. Details of our key initiatives are set out below.

Information on how we work with others to achieve responsible global value chains for cobalt is provided in 'Responsible value chains' on p. 92.

The Good Shepherd International Foundation

We continued our multi-year partnership with the Good Shepherd International Foundation ('GSIF'). This aims to improve living conditions in local communities, especially for women and children. Since its launch in 2017, ERG has committed more than US\$1 million to support the programme.

During the year, we also supported the GSIF's efforts to help local communities manage the immediate impacts of COVID-19. This contributed to:

- The distribution, through a vocational training programme for local women, of 16,200 face masks to local community members (including the families of our employees)
- The delivery of drinking water to 400 families (approximately 2,800 people) in the communities of Kanina and Kabamba
- The training of 12,298 individuals from ASM communities on preventative measures

In addition, we continued to support the ongoing rollout of the GSIF's Bon Pasteur intervention programme in Tshala, which has helped to establish 10 farming cooperatives. In 2020, this contributed to:

- The provision of educational support through a mobile outreach programme to 216 children (103 boys and 113 girls)
- The provision of training in financial literacy to 247 community members (as part of our support for alternative livelihoods)
- The delivery of awareness training on children's rights and the risks associated with child labour to 758 community members

During the year, other GSIF initiatives were disrupted due to COVID-19.

³ We launched the programme in response to community priorities identified through our 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.



©Photo courtesy of the Good Shepherd International Foundation/Nyokabi Kahura.

‘Children Out of Mining – Northern Kolwezi’ programme

In 2020, we concluded a major one-year partnership with Pact, an international development organisation and co-founding member of the Global Battery Alliance (p. 92).¹ The ‘Children Out of Mining – Northern Kolwezi’ programme aims to strengthen child protection in communities in Northern Kolwezi near Metalkol RTR through a range of tailored capacity building initiatives.²

During the year, the programme supported 120 miners aged between 15 and 17 (over 50% of whom are girls) through a six-month vocational training programme (including in auto-mechanics, masonry, carpentry, welding and sewing). The programme included the provision of training on business and financial management, as well as tools and materials to support the transition to alternative employment. All 120 apprentices graduated from the programme in 2020.

The programme also supported awareness raising on children’s rights and the risks associated with child labour to 67,264 community members (between November 2019 and September 2020).

Fund for the Prevention of Child Labour in Mining Communities

In 2020, ERG donated US\$500,000 to the Fund for the Prevention of Child Labour in Mining Communities – an initiative of the Global Battery Alliance (GBA) that is administered by UNICEF. The Fund aims to raise US\$21 million over the next three years to address the root causes of child labour in mining communities in the DRC.

It will focus on a range of interventions to strengthen basic social services, reinforce child protection systems and enhance social protection mechanisms (including through support for alternative income generating activities). It will be implemented in partnership with the government and civil society organisations in the DRC – and will be fully aligned to national development priorities, as well as the UN Sustainable Development Goals (SDGs).

KEY ISSUES AND INITIATIVES – BRAZIL

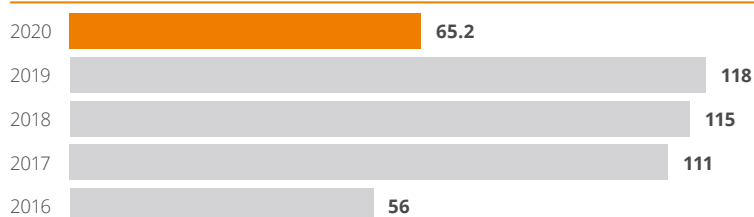
At our BAMIN iron ore operation in Brazil, many local communities live in conditions of poverty with limited access to formal employment opportunities. As required by our Porto Sul port development licence, we launched a range of new CSI projects – as well as several impact management initiatives (p. 53). Relevant CSI projects included the delivery of vocational training for community members and support for local cultural development.

In addition, we continued to provide funding for the São José – Santa Casa de Misericórdia Hospital in the city of Ilhéus, which faces significant budgetary challenges. This helps to support catering for employees, patients and visitors. In 2020, we invested around US\$104,000 in this regard.

¹ Pact: pactworld.org.

² The programme focuses on 12 villages in Northern Kolwezi, selected because of the close proximity of residential areas to active mine sites, and therefore high risk of child labour in mining.

Group CSI contributions by year (US\$M)



Group CSI contributions by region (US\$M)

Region	2020	2019
Kazakhstan	59.7	109.8
Africa	5.3	7.9
Brazil	0.2	0.3

CSI contributions in Kazakhstan by type (US\$M)

Spending type	2020	2019
Direct investment	42.3	91.3
Regional memoranda of understanding ³	17.4	18.5

PERFORMANCE

Community Social Investment (CSI)

In 2020, ERG's worldwide CSI contributions were more than US\$65 million (2019: US\$118 million). The decrease against the prior year reflects one-off payments for a number of national-level social investment projects in Kazakhstan in 2019. This figure includes our investment of US\$17.4 million to fund Regional MoUs with local governments under our regional development programme in Kazakhstan (p. 55). It also includes our support for national-level social investment projects in Kazakhstan. Most notably, this includes a donation of more than US\$10 million to create a national foundation to address the socio-economic impacts of the COVID-19 pandemic – as well as a donation of US\$10 million to the Foundation of the First President of the Republic of Kazakhstan – Elbasy (2019: US\$53 million) to support infrastructure development.

On a regional basis, our CSI contributions were US\$59.7 million in Kazakhstan, US\$5.3 million in Africa and US\$0.2 million in Brazil.

PLANNING FOR THE FUTURE

We plan to build on our existing CSI programmes in Kazakhstan through a range of strategic initiatives including:

- The ongoing implementation of our three-year regional development programme, as well as commencing planning and engagement for the next phase of the programme (which will run from 2022)
- The ongoing rollout of our Community Town Initiative, including the provision of funding (under our Regional MoUs) for 10 CSI projects identified through the pilot phase in Khromtau – as well as its expansion to Aksu (Pavlodar region) and Rudny (Kostanay region)

In the DRC, we plan to:

- Install new wells and solar-powered water distribution facilities for local communities near Metalkol RTR, with resources allocated based on population size/potential impact
- Launch a new Sustainable Agricultural Programme at Metalkol RTR under our Commitments Register, including the provision of capacity building focused on farming techniques and financial management for nine local communities
- Continue to support our directly funded agricultural project for the Kashala community near Metalkol RTR, as well as continuing the rollout of our agricultural programme at Frontier

In addition, we will continue to support the GSIF's Bon Pasteur intervention programme, including the following initiatives that were disrupted in 2020 due to COVID-19:

- The construction of a new child protection centre in the local town of Tshala (scheduled for completion in 2022)
- The launch of a new social business model in Tshala, with a focus on fish farming
- The launch of a mobile health clinic in Tshala to provide basic preventative healthcare and maternal healthcare services

At our BAMIN iron ore operation in Brazil, we plan to continue a range of social programmes at the mine and the port, including investment mandated under our environmental licence. We also plan to help review and update the Ilhéus Urban Development Master Plan (PDDU), which will benefit both our Porto Sul development and local people.

³ Including projects outside our operating regions in Kazakhstan.

ENVIRON

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.

Our operations in Kazakhstan are certified to the ISO 14001 environmental management system standard.¹ In Africa, our Safety, Health and Sustainability (SHS) management system is informed by ISO 14001.²

MATERIAL ISSUES INCLUDE:



MANAGING IMPACTS ON AIR AND WATER

[READ MORE ON P. 66](#)



ENERGY AND CLIMATE CHANGE

[READ MORE ON P. 70](#)



WASTE RECYCLING AND MANAGEMENT, INCLUDING TAILINGS

[READ MORE ON P. 74](#)

¹ With the exception of 3-Energoortalyk (purchased in 2018) as well as our ERG Service company, which provides repair and maintenance services for ERG's sites in Kazakhstan.

² At our Metalkol RTR operation in the DRC, we expect to achieve certification to ISO 14001 in 2021 (p. 100).



ENVIRONMENTAL

2020 HIGHLIGHTS

Continued to implement an advanced filter technology programme to reduce our emissions to air in the Pavlodar region (p. 67)

Metalkol RTR became the second largest cobalt producer in the world – making it a key contributor to the global energy transition

Ongoing third-party risk assessments at our large-scale waste storage facilities in Kazakhstan



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 maintenance of relevant international standards.

RELEVANT UN SUSTAINABLE DEVELOPMENT GOALS

UN SDG	ASSOCIATED UN TARGETS
	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
	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

Our international standard environmental management systems are strongly focused on the detection, prevention and/or minimisation of harmful discharges to local water systems and to the air.

Key control measures include, amongst other things:

- The treatment of emissions to air
- The treatment and recycling of process water
- Technical and engineering controls to minimise pollution risks
- Ongoing air and water quality monitoring

KEY ISSUES AND INITIATIVES

In Kazakhstan, our most significant impact on air quality takes place in and around the industrial city of Pavlodar. This is 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. While we are compliant with regulatory emission limits, there are issues with local air quality due to the large number of industrial operations in the region – as well as the widespread use of coal for domestic heating.

In this context, we are working actively to better understand and reduce our emissions to air. The delivery of assurance to a range of stakeholders in Kazakhstan is important given evidence of growing stakeholder concern over air pollution outside of our operating regions. Live data relating to particulate matter, SO_x, NO_x and carbon monoxide emissions from Aluminium of Kazakhstan's Pavlodar Aluminium Plant and Power Station is disclosed via a public, digital dashboard in Pavlodar. This data is generated by an automated 'sanitary protection zone' monitoring station.

Environmental Strategy in Kazakhstan

Our country-specific Environmental Strategy in Kazakhstan supports our Group 2025 Strategy. Amongst other things, the Environmental Strategy is focused on:

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

The Environmental Strategy, which is ultimately designed to bring our environmental practices in line with international best practice, is actively helping us comply with Kazakhstan's new Environmental Code (see opposite).

In 2020, we continued to implement the Environmental Strategy, with a primary focus on reducing our emissions to air. This includes the application of advanced filter technology.

New Environmental Code in Kazakhstan

Kazakhstan's new Environmental Code was signed into law in January 2021 and came into force in July 2021. Amongst other things, the Code:

- Requires the application of 'best available techniques/technologies' (or BAT) where necessary
- Applies a new system of Integrated Environmental Permits (IEPs), which will be implemented from 2025. Those operations that have IEPs in place will receive significant environmental tax relief

In 2020, we carried out technical audits at Kazchrome's Aktobe Ferroalloys Plant and Aksu Ferroalloys Plant to understand what investments are likely to be required to meet the Code's requirements. This follows similar audits at EEC and Aluminium of Kazakhstan in 2019. Our primary focus in this regard relates to the management of our particulate emissions.

In the meantime, in early 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. The tax savings achieved by having these IEPs in place will help fund our BAT investment programme.

In 2021, we plan to enhance our environmental management systems and practices to support our compliance with the Code. This includes a focus on:

- The continued application of advanced filter technology to reduce our particulate emissions
- Investigation of measures to reduce our NOx, SOx and carbon monoxide emissions
- The automated collection and analysis of our environmental data
- The launch of preparatory works to install automated, at-source air emissions monitoring systems, as well as the further rollout of on-boundary automated monitoring systems.

Beyond 2021, we are also planning to obtain IEPs for our remaining assets in Kazakhstan.

In addition, heavy industrial, metallurgical and mining operations carry a range of inherent risks in relation to their potential impacts on water quality, which require our ongoing management. These include risks relating to the quality of our planned discharges to the environment, the potential for unplanned discharges, the potential seepage of process water to the environment and other related issues.

Managing our emissions in Kazakhstan

Air emissions

Amongst other things, our Environmental Strategy (see opposite) is intended to bring our operations in Kazakhstan – and our metallurgical and power generation operations in particular – closer in line with relevant European Union (EU) air quality standards relating to particulate matter. This ambitious programme is expected to require expenditure of approximately US\$350 million over a ten-year period.

While particulate emissions from our existing power generation and metallurgical plants were in line with local regulatory requirements in 2020, the Strategy will help us improve our air quality performance and comply with the terms of Kazakhstan's new Environmental Code (which came into force in July 2021). Furthermore, it has also helped us obtain IEPs for key operations (see above).

Key areas of focus include the application of advanced filter technologies and the conversion of selected boiler houses to gas, where possible.

In 2020, we continued to take measures to improve our emissions performance, with a focus on the Pavlodar region. These included:

- **Aksu Ferroalloys Plant:¹**
 - The initiation of work to upgrade the filter at Smelting Workshop No. 4, with the process due to be completed in 2021. Additional filters will be fitted at the workshop in future
 - The commissioning of smelter furnace No. 64, following its reconstruction. Along with the fitting of two new gas filters, this will reduce the furnace's emissions to air
- **Aktobe Ferroalloy Plant:**
 - The installation of smoke exhausts that run into filters at Workshop No. 1 – with future plans to install new, more effective filters, including at Workshop No. 2
 - The carrying out of work to reduce dust emissions at the plant's slag dump, reducing dust emissions by over 600 tonnes per year. This was done through the application of special reagents to the surface of the dump, which will be repeated on an annual basis (p. 75)

- **Aluminium of Kazakhstan:**

- The installation of two advanced filters at one of the eight furnaces in the sintering shop at Pavlodar Aluminium Plant, which – once commissioned – will remove up to 99% of particulate emissions
- The installation of a modern, water spray-based dust suppression system at the ash dump of the Power Plant, as well as a new water collection and return system (p. 68)

- **EEC:**

- The commissioning of Power Unit No. 5, which has been equipped with an advanced filter. This resulted in a reduction in particulate output of more than 5,000 tonnes during its first year of operation. There are plans for additional filter replacements at all of EEC's other power units, which is expected to reduce its total particulate emissions by up to 98%

In addition, we completed the project design process for the conversion of the boiler house at Kacharsky iron ore mine from coal to gas. This project, which is due for completion in late 2023, will not only improve its overall efficiency, but will significantly reduce its emission of particulates, NOx,² SOx³ and GHGs.

¹ In addition, in 2019 we carried out a successful pilot project at Smelting Workshop No. 4 to eliminate the crushing, tromelling and melting process. This is with the aim of (alongside newly fitted modern filters) reducing particulate emissions to air, energy consumption and unit costs. As with a number of other projects, work was suspended in 2020 due to COVID-related disruption – including a temporary inability to bring in specialist contractors from abroad.

² Nitrogen oxides.

³ Sulphur oxides.

Water emissions

We apply a range of measures to avoid or minimise our emissions to water, including:

- Treatment and recycling of wastewater and process water
- The application of engineering controls and the ongoing auditing of our hydraulic structures
- Ongoing water quality monitoring to identify irregular discharges
- Measures to minimise the volume of our water discharges

In 2020, we took additional steps under our Environmental Strategy in Kazakhstan to enhance our water management. This included the raising of the Power Station's ash dump at Aluminium of Kazakhstan, plus the installation of a new collection and return system (based on a clay wall and drainage ditch) to prevent groundwater seepage.

The water saved by the system will be used for dust suppression (p. 75). In addition, we determined the design of a new system to collect and treat pit water at the Krasnooktyabrsky Mining Unit, with Phase 1 of construction (focused on oil separation) to start in 2021.

Managing our emissions in Africa

Each of our active sites in the DRC has a legally mandated Environmental and Social Impact Assessment (ESIA) in place, prepared by third-party experts. These contain air and water quality management plans, which include relevant requirements for the regular monitoring of our emissions to air (e.g. particulates, SO_x and NO_x) and water (e.g. as suspended solids, dissolved solids and heavy metals).

Air emissions

Frontier's main emissions to air come from its heavy vehicles and diesel generators, while dust from in-pit activity and road transport can also affect local air quality. Similarly, while the plant at Metalkol RTR produces some emissions, the main impact on local air quality relates to dust emissions.

Water emissions

At Frontier, we pump significant volumes of groundwater from the pit into the natural environment. Settling ponds have been constructed to reduce (where needed) the amount of suspended solids in the water prior to its discharge.

At Metalkol RTR, wastewater from the plant is discharged to a residual storage facility and recycled back to the plant. We apply a comprehensive upstream/downstream water quality monitoring system to ensure we do not contribute to existing water quality challenges in the area.



Pollution monitoring

Kazakhstan

We apply a range of air quality monitoring measures, including regular monitoring of our gas and particulate emissions at, and around, our major plants. We also use spectrometry to generate additional insight into the exact composition of our emissions.

In 2020, we started to identify which sites will be fitted with 'at source' automated monitoring systems, with installation planned for 2021 and 2022. These will offer real-time data and the ability to adjust production activity if there is a risk of excessive emissions. In addition, we carried out preparatory work for the planned installation of remote, automated monitoring systems located 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

This builds on the previous application of automated monitoring systems at Aluminium of Kazakhstan's operations in Pavlodar.

In terms of water quality, 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.

Africa

We apply a range of measures to monitor air and water emissions, including:

- The preparation of air and water monitoring plans by independent third parties, covering both the sites themselves and local villages. These plans are compliant with national standards, are informed by the requirements of our ESIs and are implemented through our SHS management system (including detailed requirements such as parameters to be monitored, monitoring locations, etc.). Air and water samples are analysed by independent, accredited laboratories.
- The application of IsoMetrix software helps us manage and analyse our monitoring results, take action where needed and ensure the proper resolution of any identified issues
- Annual reporting of our monitoring results to the DRC Government. Where needed, results are independently reviewed by third-party consultants to ensure monitoring quality

PERFORMANCE

In 2020, while our particulate and gas emissions to air in Kazakhstan were well within permitted limits, there were marginal increases compared to 2019. This was primarily due to:

- Increased energy generation by EEC
- Increased use of high-sulphur, calcined petroleum coke in the production of anodes at KAS
- Increased aluminium production

In Kazakhstan, the overall volume of – and levels of pollutants within – our water emissions were within permitted limits and were lower than in 2019.

Dust deposition continues to be a general challenge at our sites in the DRC, primarily during the dry season. This reflects the local environment, as well as bushfires, slash and burn agricultural practices, and a general lack of paved roads. In terms of our own dust emissions, we use water bowsers and chemical suppressants to reduce the impact of onsite traffic.

While some excessive dust depositions were identified near Frontier's treatment facilities, corrective actions have been implemented, including the installation of dust suppression systems. In addition, Frontier measured some excessive PM10 particulate¹ emissions, including at monitoring points close to a major public road. We are investigating the degree to which this reflects our own emissions versus publicly generated emissions.

At Frontier, quarterly testing by internationally accredited laboratories indicated that water discharges were suitable for discharge in terms of relevant international and national regulatory standards.

Production ramp-up at Metalkol RTR meant that air and water emissions at the site were higher than in 2019 – reflecting volumes processed. Nonetheless, air emissions were within permitted average annual limits. While there were some temporary exceedances, these partially reflected non-mining related dust emissions, as well as PM10 emissions generated by nearby external activities (including external road traffic, third-party mining and community activity).

Wastewater from Metalkol RTR's plant is recycled. Surface water monitoring, which is carried out on a daily basis, did not identify any regulatory exceedances during 2020.

PLANNING FOR THE FUTURE

In 2021, key areas of focus in Kazakhstan will include:

- The further rollout of:
 - Advanced filter technology at our operations in Pavlodar and Aktobe
 - Automated, on-boundary air quality monitoring systems at our operations in Pavlodar, as well as at Donskoy GOK (Kazchrome)
- The launch of preparatory works to install automated, at-source air and water emissions monitoring systems in Kazakhstan
- The development of new wastewater treatment and recycling facilities at Aksu Ferroalloys Plant – as well as additional projects at Aktobe Ferroalloys Plant and Aluminium of Kazakhstan to further reduce their potential impacts on local water systems

In addition, we plan to install a new dust fallout monitoring system at Metalkol RTR in the DRC to enhance the detection and monitoring of internal and external sources of dust emissions.

Beyond 2021, we plan to obtain additional IEPs (in the context of Kazakhstan's new Environmental Code) for those operations in Kazakhstan that have not yet received them (p. 67) – and to engage with regulators regarding Code implementation.

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



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 local well-being includes the management of our carbon emissions and the use of renewable energy.

RELEVANT UN SUSTAINABLE DEVELOPMENT GOALS

UN SDG	ASSOCIATED UN TARGETS
7 AFFORDABLE AND CLEAN ENERGY 	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 DECENT WORK AND ECONOMIC GROWTH 	8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation
9 INDUSTRY INNOVATION AND INFRASTRUCTURE 	9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable
12 RESPONSIBLE CONSUMPTION AND PRODUCTION 	12.2 By 2030, achieve the sustainable management and efficient use of natural resources
13 CLIMATE ACTION 	13.2 Integrate climate change measures into national policies, strategies and planning 13.3 Improve education, awareness-raising and human and institutional capacity on climate change

ERG remains one of Kazakhstan's largest electricity producers (17.5% of national generation). Most of our total installed capacity of 3,387 MW is used to service our own operations. The majority of our energy-producing operations in Kazakhstan are certified to the ISO 50001/EN 16001 energy management system standard.¹

Of the power we consume in Kazakhstan, 83% (2019: 82%) is generated using coal produced by EEC. 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 focused on reducing our carbon emissions on a medium- to long-term basis, without undermining the foundations of our business. In 2020, we appointed a dedicated Renewable Energy Portfolio Director, who will be responsible for managing renewable energy projects across the Group. Furthermore, in 2021 we initiated a formal process to establish 2030 renewable energy and GHG reduction targets.

In the DRC, most of the electricity we use is generated from hydropower. Our greenhouse gas (GHG) emissions in the region largely relate to the operation of our vehicles and emergency generators.

KEY ISSUES AND INITIATIVES

Policy context

Kazakhstan's 2017 National Plan and emissions trading scheme do not currently apply restrictions on our emissions. Nonetheless, Kazakhstan is a signatory to the 2015 Paris Agreement on climate change and plans to reduce national GHG emissions by 15% (unconditional)/25% (conditional) by 2030. Furthermore, in December 2020 the President announced that the country would seek carbon neutrality by 2060. This means that we could face future restrictions on our emissions.

¹ During the year, we continued to prepare for re-certification of relevant assets in Kazakhstan to the 2018 update of the standard by 2021 (with EEC, KAS and SSGPO having already received certification). All other operations in Kazakhstan apply energy management systems that are otherwise aligned with the standard.

Furthermore, the European Union's (EU) planned Carbon Border Adjustment Mechanism' (often referred to as a 'carbon border tax') will apply some form of levy on non-EU imports based on their carbon footprint. This is expected to come into force by 2023 – with payments due from 2026.

In this context, we have clear incentives to improve our energy efficiency and, over time, reduce our reliance on coal-generated power – while also pursuing the commercial opportunities offered by 'transition metals' such as cobalt, copper and aluminium. Similarly, we are positioned to benefit from a potential increase in demand for ferroalloys, in the context of the development of new gas, wind and nuclear power generation capacity.

Energy efficiency in Kazakhstan

In 2020, we applied 80 energy-saving measures across our operations in Kazakhstan under our 2016-2020 Energy Efficiency Programme. These are in addition to other projects referenced in the 'Technology, efficiency and digitalisation' (p. 28) and 'Managing impacts on air and water' sections (p. 66), that are likely to help reduce our carbon emissions.

Examples of our energy-saving measures included:

- **EEC:** Installation of an automatic fuel management system and a vehicle monitoring system
- **Kazchrome:** Implementation of longitudinal compensation devices on our furnaces to reduce electricity losses
- **Kazchrome:** The operational stabilisation of our electric furnaces (as well as the selection of optimal voltages) to reduce energy consumption
- **SSGPO:** Optimisation of the lighting system through the implementation of lighting control automation

Collectively, these initiatives reduced our total energy consumption by more than 284 terajoules (2019: 600 terajoules).

In addition, we completed energy audits at all our operations in Kazakhstan, the outcomes of which will inform our 2021-2025 Energy Efficiency Programme – with a focus on saving around 6,360 terajoules through:

- The modernisation of our lighting systems
- The installation of variable frequency drives on selected equipment
- The refitting of thermal insulation
- The optimisation of our production processes



Potential generation of energy using off-gas from our ferroalloy production process

In 2020, we continued to examine the generation of energy using off-gas from our ferroalloy production process. This includes:

- The initiation of a feasibility study into the potential construction of an off-gas-fuelled power station at Aktobe Ferroalloys Plant
- The conversion of the boiler house at Aksu Ferroalloys Plant to off-gas

This is with the aim of reducing our consumption of energy from conventional sources and – by extension – the carbon intensity of our production.

Renewable energy

Kazakhstan achieved its 2020 national renewable energy target by generating more than 3% of its electricity from renewable energy sources (i.e. wind, solar and small-scale hydro). It has additional targets to generate:

- 15% of electricity from renewables by 2030
- 50% of electricity from renewables and alternative energy sources (e.g. nuclear power) by 2050

In this context, conventional energy producers – including EEC – are legally required to purchase defined amounts of renewable energy (which significantly increases their cost base) or to establish (either directly or through their corporate groups) captive renewable energy generation capacity.

We plan to develop generation capacity of about 150MW using wind turbines. Following strong wind monitoring results in 2019, we have transitioned two potential generation projects to a feasibility stage at sites in the Aktobe and Pavlodar regions – one near Kazchrome's Donskoy GOK operation and one near EEC's Vostochny coal pit. We are also examining the potential integration of additional renewable energy projects into our portfolio to further reduce our cost base and carbon footprint.

As noted, the fact that our operations in Africa region largely rely on hydropower significantly reduces their carbon footprint. Meanwhile, in Brazil we are actively exploring potential opportunities to supply BAMIN with renewable power – to support both its immediate production and its future development.



Advancing supply chain visibility through the World Economic Forum's Mining and Metals Blockchain Initiative

In December 2020, the Mining and Metals Blockchain Initiative – a collaboration between leading companies including Anglo American, Antofagasta Minerals, ERG and Glencore, as well as the World Economic Forum – released a proof of concept platform to trace carbon emissions across the value chain using blockchain technology. This is with the aim of supporting the development of a solution for supply chain visibility and associated environmental, social and governance (ESG) requirements.

Energy security in Africa

The DRC and Zambian Copper Belt continued to experience power outages due to a structural energy deficit, infrastructure challenges and the impact of lower water levels on hydropower generation. A possible regional power surplus was expected in 2020 due to the completion of the Zambian state power company's (ZESCO) 750MW Kafue Gorge Lower hydropower project. However, the project was slightly delayed with the filling of the dam only being completed in early December 2020 – reducing its impact on the regional energy balance during the year.

At Metalkol RTR, we continued to maximise our use of cheaper, domestically generated power (including hydropower) from DRC utility SNEL – before using more expensive, imported power. In addition, we are actively investigating other renewable energy supply options for our operations.

PERFORMANCE

In 2020, we used 270,197 terajoules of energy globally (2019: 270,939 terajoules), with 83% of direct energy sourced from coal (2019: 82%). This is in a context in which we saw:

- Reduced natural gas consumption at our Akturbo Power Station in Kazakhstan due to the carrying out of capital repairs
- Reduced levels of diesel consumption at our operations in Africa (including the placement of Boss Mining and Chambishi Metals into care and maintenance in 2019 and 2020 respectively)

In addition, we reduced electricity purchases from third parties in Kazakhstan due to the post-reconstruction commissioning of EEC's Power Unit No. 5.

In terms of our GHG emissions, we saw a small increase in CO₂e, reflecting the start of operations at EEC's Power Unit No. 5.

Energy consumption breakdown (terajoules)

Type	Energy source	2020	2019	2018	2017	2016
Direct	Coal	221,950	217,768	227,368	226,405	225,288
	Petrol	113	138	147	144	160
	Residual fuel	6,750	7,130	7,284	7,185	6,909
	Diesel	9,074	9,599	8,606	8,038	8,079
	Natural gas	29,014	31,306	28,949	19,921	18,338
	Kerosene	14	14	9	15	15
	Liquefied gas	0	1	0	0	0
	Subtotal	266,915	265,956	272,362	261,708	258,789
Indirect ¹	Electricity	3,005	4,716	2,943	2,537	2,377
	Heat	168	204	211	207	278
	Steam	110	63	80	69	77
	Subtotal	3,282	4,983	3,234	2,813	2,732
	Total	270,197	270,939	275,596	264,521	261,521

GHG emissions (tonnes CO₂e)

	2020	2019	2018	2017	2016
Scope 1 emissions	24,204,499	24,026,847	24,672,108	24,014,808	23,768,926
Scope 2 emissions	115,602	224,837	59,026	55,572	365,746
Total	24,320,101	24,251,684	24,731,134	24,070,380	24,134,672

¹ Excluding internal purchases of internally-generated power.



PLANNING FOR THE FUTURE

In 2021, we plan to:

- Commence implementation of our 2021-2025 Energy Efficiency Programme
- Continue to develop our renewable energy generation projects
- Continue to progress the development of projects to generate energy using off-gas from our ferroalloy production processes at Aksu Ferroalloys Plant and Aktobe Ferroalloys Plant
- Establish an ERG Decarbonisation think tank, as we explore further opportunities to reduce our carbon footprint

ICDA ferrochrome environmental lifecycle assessment

In 2020 we continued to participate in a data collection exercise commissioned by the International Chromium Development Association (ICDA). This is with the aim of better understanding and managing the full scope of our product impacts – across

a range of environmental parameters, including GHG emissions. Data collected from ERG and other participating companies will update the ICDA's Lifecycle Inventory (LCI) for the 2018 reference year. The results are due to be published in 2021.



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 physical and environmental management of our waste.

RELEVANT UN SUSTAINABLE DEVELOPMENT GOALS

UN SDG

ASSOCIATED UN TARGETS



9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable



12.2 By 2030, 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

Tailings and other high-volume waste

Our mining and metallurgical operations produce large volumes of waste rock, tailings and sludges – while our generation of coal-fired power produces large volumes of ash. These deposits are managed in line with our established environmental management systems and local regulations (including an annual audit conducted by external experts). This includes a focus on preventing groundwater and surface water pollution, the management of fly ash/dust, as well as the physical integrity of large-scale waste storage facilities. We maintain liquidation funds to ensure the safe closure of facilities upon the future completion of their operation.

The fatal dam collapse at Vale's Córrego do Feijão mine near Brumadinho, Brazil in January 2019 highlighted the potential risks associated with the management of such structures. In the same year, we implemented an internally-managed risk assessment of our large-scale waste storage facilities and developed a Group-level action plan (i.e. to supplement our existing monitoring activities).

The Group-level action plan saw us engage international, third-party experts to carry out supplementary risk reviews of our facilities.¹ In 2019, this third-party risk review process was completed in Africa and was initiated in Kazakhstan.

In Kazakhstan, in 2020 the third-party risk reviews were carried out at Pavlodar Aluminium Plant, Aluminium of Kazakhstan's Power Plant, SSGPO, Aksu Ferroalloys Plant and Donskoy GOK (Kazchrome). These reviews focused on operating conditions at the facilities, their compliance with their design parameters and other relevant factors. In addition, they also examined potential risks posed to local populations and the environment. We are addressing identified risks at the Pavlodar Aluminium Plant's tailings storage facility (TSF) and are developing similar measures to be applied at our other facilities.

In addition, our facilities in Kazakhstan are subject to regular, legally-mandated monitoring inspections. These are carried out by both our internal teams, as well as third-party specialists.

Following the initiation of our third-party risk review programme in 2019, we had planned to implement these annual reviews at Metalkol RTR, Frontier, Boss Mining, Comide and Chambishi in 2020. This process was delayed, however, as a result of the COVID-19 pandemic. The process resumed in 2021, with both Metalkol and Frontier being subject to third-party risk reviews in the first half of the year. Further reviews are due to take place at Boss Mining, Comide and Chambishi. Resulting recommendations will be implemented by each operation's maintenance team – and will be subject to monitoring programmes.

At Metalkol RTR and Frontier, the third-party risk reviews included the examination of current operating procedures and facility maintenance, with a focus on potential hazards associated with sinkhole formation, the raising of pool walls and decant water management. As Boss Mining, Comide and Chambishi are on care and maintenance, the focus will be on facility maintenance, including progressive rehabilitation, stability risk management and the prevention of pollution.

¹ The reviews reference both relevant domestic regulations and standards, as well as Canada's Dam Construction Association (CDA) Dam Safety Guidelines and the Australian National Committee for Large Dams' (ANCOLD) Guidelines on Tailings Dams.

MANAGING DUST EMISSIONS AT OUR LARGE-SCALE WASTE FACILITIES

Our emissions to air extend beyond those produced during our mining, metallurgical and energy generation processes. Some of our TSFs, overburden dumps, ash dumps and slag dumps have the potential to generate dust emissions. This can require active management.

In 2020, for example, we applied special reagents to the surface of Aktobe Ferroalloys Plant's 40-hectare slag dump. This binds the top layers of fine slag into a solid crust that can withstand erosion. Following the successful application of this technique, we will continue this process on an annual basis. Similarly, we also installed an innovative dust suppression system at Aluminium of Kazakhstan's Power Station ash dump. This uses large numbers of nozzles to spray water onto the dump in the summer, binding the ash.



In Brazil, our proactive transition from an upstream to a downstream tailings model ensured continued compliance with both local regulations and international standards, which were revised following fatal dam collapses in the country. We continue to study additional technological enhancements to ensure the construction and operation of a world class facility.

Other industrial waste

Our operations also produce a range of operational waste such as scrap metal, oil, wood and other materials. In Kazakhstan, this is categorised as 'Green', 'Amber' or 'Red' to reflect relative levels of potential hazard. Red or Amber waste is collected, transported, recycled and/or disposed of by suitably qualified specialist service providers.

As part of this process, we check:

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

In 2020, we took action following the discovery in 2019 that three waste contractors serving the Aktobe Ferroalloys Plant had dumped (contrary to the terms of their recycling contracts) Amber category waste on open plots of land and in a rented warehouse in Aktobe. Kazchrome had legally transferred ownership of the waste to the contractors for processing. However, due to the fact that the contractors have ceased operating, and in order to prevent negative impacts to the environment, Kazchrome is independently carrying out the removal and disposal of this waste.

We have taken a range of measures to prevent the reoccurrence of any further incidents of this nature. This includes a cessation of the transfer and sale of this type of waste to third parties, with storage and disposal now being carried out internally. More broadly, we took steps to increase recycling of such waste to minimise the need for its physical disposal.

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.



KEY ISSUES AND INITIATIVES

Cleaning up legacy tailings at Metalkol RTR

Our Metalkol RTR tailings reprocessing facility near Kolwezi in the DRC will help to actively address decades of historical, third-party tailings mismanagement and land degradation that took place prior to our ownership. This involved:

- The dumping of tailings into the Musonoi River valley, with more than 83.2 million tonnes of tailings spread over an area 11km long and up to 2.5km wide – impacting the local water system and beyond
- The dry-stacking of tailings at the Kingamyambo Tailings Dam, which initially contained 41.1 million tonnes¹ of tailings and continues to produce dust emissions

Metalkol RTR is extracting (through hydraulic mining and dredging), reprocessing and re-depositing these tailings into a modern, closely-managed and centralised TSF. This facility is operated by a dedicated international contractor and third-party specialist. It is subject to regular inspection, monitoring and reporting, supported by a dedicated Engineer of Record and an independent laboratory.

Furthermore, we are working with a team of agronomists from the University of Lubumbashi who are examining the potential rehabilitation of our operational areas. In 2020, this included the experimental planting of trees at the Kingamyambo tailings dam to better understand their growing potential.

ERG Recycling in Kazakhstan

ERG Recycling – a dedicated entity established in 2019 – oversees our waste reprocessing, recycling and commercialisation efforts. This not only supports the ‘circular economy’ concept, but also helps reduce our environmental liabilities.

Waste commercialisation

We sell a range of waste for use as raw materials in other industries – including construction, metal production, chemical production and road construction (see table).

Waste reprocessing

In terms of waste reprocessing, ERG Recycling’s efforts are focused primarily on Kazchrome. Key projects in 2020 included the following at our Aktobe Ferroalloys Plant:

- The commissioning of a new workshop that reprocesses slag, dust and other fine waste. It does so by turning it into high-quality briquettes (with around 40% chrome content) and has a production rate of more than 5,000 tonnes per month. In addition, the workshop produces building materials as a by-product
- The significant expansion of our programme to reprocess the operation’s 14.7 million tonne slag stockpiles. In 2020, over 100,000 tonnes of slag were processed and 4,100 tonnes of ferrochrome metal concentrate were obtained
- The processing of more than 60,000 tonnes of stabilised slags, with enrichment to take place in 2021

Waste commercialisation overview

Waste currently sold (examples)

- Slag-crushed stone (Kazchrome)
- Light fraction of fly ash (EEC, Aluminium of Kazakhstan, SSGPO)
- Limestone fines (Kazchrome)
- Dust trapped by filters (KAS)
- Fly ash (EEC)
- Microsilica (Kazchrome)
- Aluminium slag (KAS)
- Metal scrap (Aluminium of Kazakhstan, KAS, Kazchrome, EEC, SSGPO, Shubarkol)

Waste-based products being investigated for potential commercialisation

- Specialised cement from ferrochrome slag (Kazchrome)
- Fertiliser from weathered coal (EEC)
- Building materials from waste (KAS)
- Ash/polymer construction materials
- Carbon foam
- Rare earths from ash (EEC)

¹ The Kingamyambo Tailings Dam contained approximately 32 million tonnes of tailings at the end of 2020, as a result of ERG’s processing activities.

SLIMES 2 TAILINGS REPROCESSING PROJECT

In 2020, we successfully completed trials of innovative flotation technology to significantly increase the enrichment of chrome-oxide bearing tailings at our 'Slimes 2' project at Donskoy GOK (Kazchrome).

This process, which will enhance the operation's output of chrome concentrate by recovering 55% of the chromium oxide in the tailings and preparing it for smelting, will also help reduce the mine's tailings footprint.

Based on the results of the trial, we plan to construct a new facility at the site to process more than 10 million tonnes of tailings, with a planned annual processing capacity of 1.7 million tonnes of tailings/450,000 tonnes² of chrome concentrate per year.



PERFORMANCE

In 2020, Metalkol RTR reprocessed a total of 6,480kt of legacy tailings (2019: 5,154kt), prior to their relocation to our centralised, modern TSF. This reflects the achievement of full Phase 1 production.

In Kazakhstan, we sold 465kt of waste to third parties (2019: 177kt). The two most significant 'products' in this regard included ferrous/nonferrous scrap, as well as crushed stone. These sales saved us US\$569,000 in waste disposal costs (2019: US\$1.4 million).

PLANNING FOR THE FUTURE

In 2021, we plan to:

- Complete a risk assessment of all TSFs and other large waste storage facilities in Kazakhstan, and to continue implementing a number of action plans developed following previous, independent assessments carried out over 2019 and 2020. We will also conduct a survey of EEC Power Station's ash dump.
- Continue the implementation of third-party TSF risk reviews at our assets in Africa (p. 74)

In addition, we will identify further waste recycling opportunities in Kazakhstan – and will investigate opportunities to produce new waste-based products. Indeed, ERG Recycling is planning to:

- Construct new enrichment facilities at Aktobe Ferroalloys Plant, which will apply a range of technologies to produce new products from waste
- Further develop EEC's ability to develop ash-polymer products

2 Note: this is an updated estimate, reflecting lower anticipated volumes than those reported in the 2019 Sustainable Development Report.

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.

MATERIAL ISSUES INCLUDE:



VALUE GENERATION AND DISTRIBUTION

[READ MORE ON P. 80](#)



INTEGRITY AND COMPLIANCE

[READ MORE ON P. 84](#)



RESPONSIBLE VALUE CHAINS

[READ MORE ON P. 88](#)



GOVERNMENT RELATIONS AND POLICY

[READ MORE ON P. 94](#)

An aerial photograph of a city, likely Yekaterinburg, Russia, showing a mix of residential and industrial buildings, green spaces, and a river in the background. A large, white, semi-transparent 'TY' logo is superimposed on the left side of the image.

TY

2020 HIGHLIGHTS

\$4,611m distributed to our stakeholders

Independent evaluation of our Compliance Programme

Implementation of our Group Supplier Code of Conduct



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 more specific 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 SUSTAINABLE DEVELOPMENT GOALS

UN SDG

ASSOCIATED UN TARGETS



1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty



8.1 Sustain per capita economic growth in accordance with national circumstances

8.5 By 2030, achieve full and productive employment and decent work for all women and men



9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product



10.2 By 2030, empower and promote the social, economic and political inclusion of all

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.

KEY ISSUES AND INITIATIVES

Value generation

Despite a year that offered significant risks in terms of operational disruption, we managed to fulfil all our production plans. This pays testament to the underlying resilience of our business.

Furthermore, we:

- Achieved record aluminium production in Kazakhstan
- Completed Phase 2 construction at Metalkol RTR, which is now the second largest producing cobalt operation in the world
- Increased copper concentrate production, with our Frontier operation maintaining its status as one of the largest producers in the DRC
- Initiated commercial production of iron ore at our BAMIN operation's Pedra de Ferro mine in Brazil (p. 27)

In this context, we increased our revenues to US\$5,356 million (2019: US\$4,872 million), despite sustained global economic uncertainty.

For further information, please see 'Business performance' on p. 12.

Promotion of broader economic development

Our activities generate a range of benefits for our host economies – and beyond. The most important example of this is our production and sale of high-quality, responsibly produced minerals and metals to industrial customers in China, Russia, the European Union (EU) and elsewhere. This supports a wide range of third-party activities, ranging from infrastructure development to the application of battery technology in electric vehicles (p. 8-9).

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, which results in a range of additional indirect and induced economic impacts.

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. 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 is responsible for reporting any non-compliance with the Tax Code of Conduct to the Audit Committee and Board of Managers. In such cases, the Group CFO should be notified so that they can designate an appropriate course of remedial action.

We continue to engage with the Extractive Industries Transparency Initiative (EITI) processes in Kazakhstan, DRC and Zambia.¹ Furthermore, we file the following with the Luxembourg authorities:

- Report on Payments to Governments under the EU Accounting Directive (2013/34/EU)²
- OECD Country-by-Country Report under OECD BEPS Action 13

Supporting local economies through 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.³ Key categories of products and services that we currently source from suppliers⁴ in Kazakhstan include raw materials, stripping, fuel, exploration, industrial clothing, drilling and blasting.

We recognise that some local companies need help in terms of achieving the capacity and competitiveness needed to access commercial opportunities at ERG. In Kazakhstan, 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. In addition, we implement a range of our own initiatives to achieve similar ends, including:

- Engagement with local manufacturers to help them complete our procurement processes – and the launch of a new Import Substitution and Localisation Programme (see p. 83)
- Our entrepreneurship programmes targeting students (p. 58), digital start-ups (see below) and local communities (p. 59)

Africa

In Africa, the sometimes remote location of our operations means there are often no local companies with the requisite status or technical capabilities to support us. Nonetheless, we are implementing a proactive process in the DRC to identify new local (i.e. DRC-owned) suppliers that can help service our operations. This will help ensure our compliance with local regulations and enhance our local economic impact. Through this approach – as well as proactive efforts to enhance the capabilities of local suppliers – we hope to increase the proportion we spend locally.

Nonetheless, given the mature nature of the mining sector in the broader Copper Belt – spanning the southern DRC and northern Zambia – we are able to draw on the support of a number of companies based in the broader region, which also service other mining operators. If necessary, we are willing to work constructively with suppliers to help them meet our requirements (p. 89).

Key categories of products and services that we currently source from suppliers in Africa include chemicals, contractors, mechanical services and fuel and lubricants.

AITU DIGITAL ECOSYSTEM: USING COMMERCIAL SOLUTIONS TO SUPPORT COMMUNITIES IN KAZAKHSTAN

ERG is an investor in Digital Ventures, a venture capital fund that finances digital initiatives that deliver sustainable benefits across society, support social resilience and help small and medium enterprises transform their business models to remain competitive in the 21st century life. This includes the provision of access to online resources and technology tailored to local needs.

The services provided by Digital Ventures' portfolio of companies forms the Aitu Digital Ecosystem. Whilst initially aimed at Kazakhstan, many of these companies are launching themselves on foreign markets.

The ecosystem's flagship project is the Aitu 'super app', which has been installed more than 1.5 million times. It brings together messenger services, music, thematic channels and more than 30 applications. Furthermore, the 42500.enbek.kz service was developed in 2020 to help more than a million Kazakhstan citizens access pandemic-specific social assistance.

Other key elements of the ecosystem include:

- **Aitube:** A Kazakh and Russian language video hosting platform, which has approximately 1.5 million unique monthly users

- **Digital ID:** A digital identification service used by more than 5 million people, helping them remotely access digital services
- **EduNavigator:** An application to guide people as they acquire – in the context of Kazakhstan's Atlas of New Professions (p. 41) – the skills they need for the future
- **Salem Social Media:** An online 'factory' for the production of web-based (primarily Kazakh-language) entertainment content, which has approximately 10 million subscribers

¹ For more information of EITI status in our other countries of presence, please see <https://eiti.org/countries>.

² EU, Directive 2013/34/EU: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013L0034>

³ 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.

⁴ In this context, 'suppliers' refers to suppliers of goods and/or service providers.

PERFORMANCE

In 2020, the economic value that we generated increased by 7% to US\$5,209 million (2019: US\$4,874 million), despite the challenges posed by COVID-19. Meanwhile, we distributed a total of US\$4,611 million to our stakeholders (2019: US\$5,162 million).

As part of this distribution, we paid US\$739 million to governments in taxes and duties (2019: US\$812 million). This reduction reflected, amongst other things, the impact of lower ferrochrome and coal prices on our profitability, the placement of assets into care and maintenance, the timing of certain tax payments, as well as broader exchange rate shifts.

Our effective corporate income tax rate reflects the statutory corporate income tax rates in the countries where we have our mining and processing operations, and where we pay more than 95% of our Group taxes (2019: more than 94%).

In 2020, higher overall revenues reflected the impact of full commercial production at Metalkol RTR and higher output at Frontier (in line with the mine plan). Revenue in

Kazakhstan was lower, however, driven by weaker average ferrochrome, coal and aluminium prices.

This was despite a very strong recovery in iron ore prices towards the end of the year. This trend has continued into 2021.

Our economic value distribution was lower than in 2019, reflecting (amongst other things), decreases in:

- Our operating costs/payments to suppliers, primarily driven by a weaker tenge, lower input costs and reduced spending in Kazakhstan, as well as avoided spending linked to the placing of Chambishi Metals into care and maintenance in early 2020
- Employee wages and benefits, reflecting lower US dollar costs in Kazakhstan (due to a weaker US\$/KZT exchange rate) and the fact that 2019 saw one-off payments to employees at Boss Mining when it was placed into care and maintenance
- Community social investment spending, reflecting the fact that we contributed to national-level social investment projects in Kazakhstan in 2019 that were completed by 2020

PLANNING FOR THE FUTURE

In Kazakhstan, we will focus on increasing production of iron ore and ferroalloys – while applying well-targeted capex to maintain and enhance our existing assets.

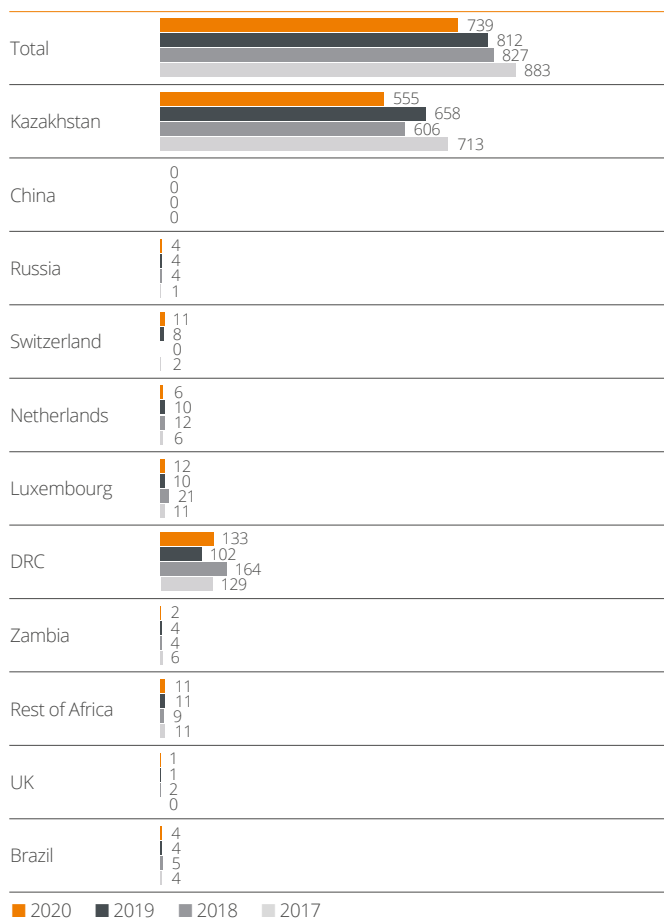
We expect Metalkol RTR to continue contributing to Group EBITDA as Phase 2 production ramps up and we increase shipment volumes in line with the growing demand for batteries.

In addition, our BAMIN iron ore operation's Pedra de Ferro mine is expected to deliver up to 1 million tonnes of high-grade, low-contaminant ore annually during its initial production phase (with the potential to increase this, subject to relevant approvals, to up to 2 million tonnes annually).

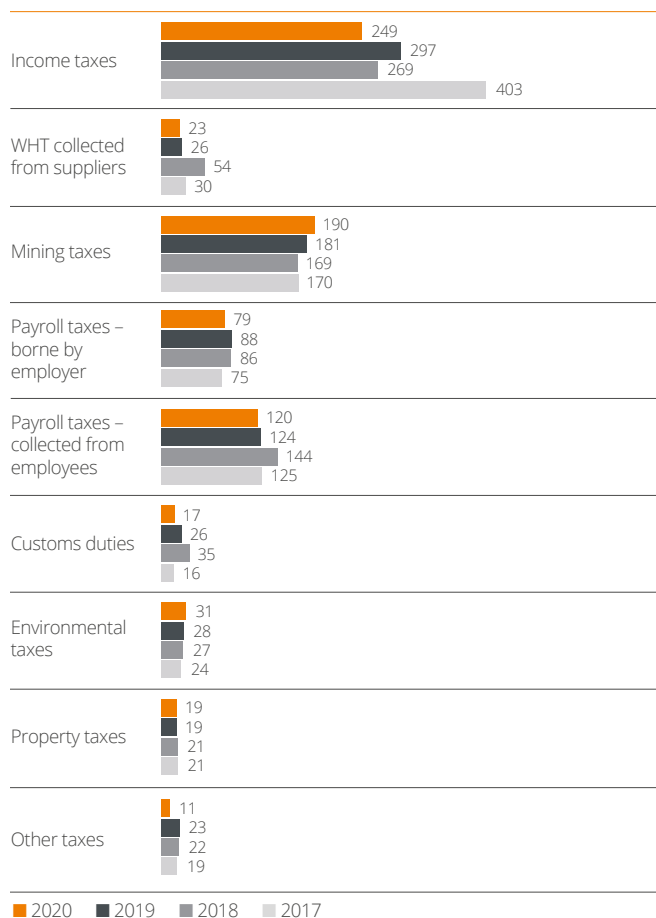
Finally, we will continue to evaluate our broader role in society and the way in which we generate value as a business – in the context of the global energy transition.

For further details on these and other portfolio development projects, please see 'Growth and asset maintenance' on p. 24.

Tax payments and royalties by location (US\$M)



Tax payments and royalties by type (US\$M)



LAUNCH OF OUR IMPORT SUBSTITUTION AND PRODUCT LOCALISATION PROGRAMME IN KAZAKHSTAN

In 2020, we launched our Import Substitution and Product Localisation Programme, aimed at:

- Developing domestic producers (including their growth, capabilities and quality standards)
- Attracting investors in new industries (or to support the modernisation of established ones)
- Ensuring a domestic supply of high-quality inputs to support our production of international-standard products
- Increasing ERG's share of local content, in line with the government's national-level goals

Companies that believe they can develop domestic production of the goods listed on the ERG Procurement Portal are invited to apply to enter into long-term or offtake

contracts with ERG so that we can help make their aspiration a reality.

In 2020, we received eight applications in this regard. Based on our initial review, three of these applications (worth up to US\$29 million over five years) were processed in 2021 and are going through contracting processes. The applications relate to the provision of foundry products, spare parts, fire-resistant clay and personal safety equipment.

Economic value generated and distributed (US\$M)¹

Type	Detail	Value in 2020					2019	2018	2017
		Kazakhstan	Africa	Brazil	Other	Total	Total	Total	Total
Economic value generated ²		3,666	1,238	3	302	5,209	4,874	5,353	5,048
Economic value distributed	1) Operating costs/ payments to suppliers ³	(1,527)	(233)	(5)	(146)	(1,911)	(2,143)	(2,155)	(1,791)
	2) Employee wages and benefits ⁴	(549)	(146)	(6)	(101)	(802)	(869)	(857)	(754)
	3) Payments to providers of capital ⁵	(334)	(15)	-	(293)	(642)	(669)	(665)	(628)
	4) Tax expenses ⁶	(458)	(208)	(3)	(14)	(683)	(609)	(589)	(660)
	5) Community social investment spending	(60)	(5)	-	-	(65)	(118)	(115)	(111)
	Other ⁷	(447)	(50)	(10)	(1)	(508)	(754)	-	-
	Total	(3,375)	(657)	(24)	(555)	(4,611)	(5,162)	(4,381)	(3,944)
Economic value retained		291	581	(21)	(253)	598	(288)	972	1,104

Local content spending in Kazakhstan (US\$M)

Procurement spend type	2020	2019	2018	2017
Total volume of purchases from local producers (including intercompany procurement)	1,412 (-8.4%)	1,541	1,559	1,183
Total volume of purchases from local producers (excluding intercompany procurement)	775 (-10.6%)	867	918	574
Share of local procurement in overall procurement ⁸	52% (+6%)	46%	47%	39%

Total volume of purchases from local producers decreased due to overall cost reductions as well as an increase in the dollar exchange rate compared to 2019. At the same time, the overall share of local procurement increased relative to 2019.

Key local procurement statistics (goods and services)

Kazakhstan	<ul style="list-style-type: none"> • 52% sourced from within the country (i.e. domestically produced) (2019: 46%) • 18%⁹ sourced from companies operating in our local mining towns¹⁰ (2019: 13%)
DRC and Zambia	<ul style="list-style-type: none"> • 70% sourced from domestically registered companies (2019: 63%)
Brazil	<ul style="list-style-type: none"> • 100% sourced from Brazilian companies (2019: 100%) • 27% sourced from companies located in the state of Bahia (2019: 28%)

1 Please note that 2019 figures for all categories (except for 'Community social investment spending') are restatements. This reflects the fact that in 2020 we adjusted our definitions in each case, which have been applied to both our 2019 and 2020 figures to support comparability. As a result of these changes, 2019 data is not comparable with that of previous years. Similarly, the 2020 data is comparable with that of 2019 but not to that of previous years. See further details in the subsequent footnotes.

2 Definition for 2019 and 2020 now includes (in addition to revenue) interest income, loss from the disposal of PPE, as well as realised gains and losses on derivatives.

3 Definition for 2019 and 2020 now includes professional fees and other exceptional litigation costs, costs related to COVID-19 and restructuring costs.

4 Definition for 2019 and 2020 now includes capitalised employee wages.

5 Definition for 2019 and 2020 now includes unwinding of discount on borrowing and capitalised borrowing costs.

6 Definition for 2019 and 2020 now includes capitalised social security costs.

7 Capex is presented gross before taking into account any disposals of property, plant and equipment.

8 Includes goods, works and services.

9 Including intra-Group purchases.

10 The following mining towns are included in calculations: Aksu, Ekibastuz, Arkalyk, Lisakovsk, Rudnyi and Khromtau.



INTEGRITY AND COMPLIANCE

Strategic context

Sustainable development of our host regions:

Compliance with the laws of our host countries – and the application of strong ethical standards, including those relating to human rights – underpins all that we do. Any failure in this regard not only has serious legal implications, but has the potential to damage our reputation, undermine our business relationships and impact the achievement of our long-term business objectives. This, and the cross-cutting nature of our compliance requirements, makes it a key area of business focus.

RELEVANT UN SUSTAINABLE DEVELOPMENT GOALS

UN SDG

ASSOCIATED UN TARGETS



8.7 Eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour



10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status



16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all
16.5 Substantially reduce corruption and bribery in all their forms
16.6 Develop effective, accountable and transparent institutions at all levels

In 2020, we continued to align our risk-based compliance practices with international best practice. This means not only meeting our legal/regulatory obligations, but:

- Adopting a 'beyond compliance' stance that also addresses business ethics more broadly
- Promoting accountability for compliance and business ethics across every part of our business

OVERVIEW OF OUR RISKS

Risk-based management sits at the heart of our Group Compliance Programme. Key risks include those relating to:

- **Anti-bribery and corruption:** 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 this risk (together with potential conflicts of interest) include community social investment (CSI) activities, giving/receiving gifts, business travel and entertainment

- **Anti-money laundering (AML):**

Furthermore, a number of jurisdictions in which we operate pose (according to the Basel Institute on Governance) relatively high AML risks. Furthermore, 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) came into force in January 2020. Amongst other things, this introduces new ultimate beneficial ownership-related measures that Member States were required to transpose by December 2020

- **Human rights infringements:** Potential areas of risk in this regard relate mainly to ERG's responsible mining commitments and the presence of artisanal and small-scale mining on or near its sites in Africa (particularly with respect to cobalt and copper mining in the DRC) (p. 86)

- **Personal data protection requirements:**

This includes compliance with the EU General Data Protection Regulation (GDPR), as well as new regulations in South Africa, Brazil and Kazakhstan. The GDPR relates to the handling of relevant EU data and carries significant penalties in the case of non-compliance – including fines representing up to 4% of global turnover

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 Committee, which analyses compliance

trends, risks and specific cases, and links compliance issues and activities to the Group's 2025 Strategy.

Our compliance policies and guidelines are implemented by our Group, regional and local Compliance managers, with assurance oversight provided at Group-level. Increasingly, our focus will be on integrating compliance practices into all our business activities, as well as promoting responsibility and accountability across all roles and business activities.

Independent evaluation of our Compliance Programme

In 2020, we commissioned an independent, British law firm to evaluate our Compliance Programme against

recognised best practice and provide input into its ongoing development (with a particular focus on the compliance implications of our involvement in new business sectors). The recommendations have been integrated into our 2021 annual plans at both Group and regional levels.

- **Sanctions regimes:** We operate in more than 15 countries, which creates a complex landscape in terms of both local sanctions programmes and extraterritorial sanctions. In the latter case, key risks relate to the selling of raw materials to parties on US/EU sanctions lists, US/EU-sanctioned countries, suppliers who may be impacted by US/EU sanctions and transactions in US dollars carried out through the US clearing system. In 2020 and into early 2021, the sanctions landscape became more dynamic, reflecting the new administration in the United States; international scrutiny of China's domestic affairs; increasing use of human rights sanctions by the US, EU and other countries; and ongoing Sino-American and Russo-American tensions

HOW WE MANAGE OUR RISKS

The Group Head of Compliance reports to the CEO and the Board of Managers' Compliance Committee (see opposite). Our senior managers are kept informed of key risk areas on a frequent basis.

Evolving our compliance approach in the context of organisational change

In 2020, we enhanced our compliance approach to reflect the fact that ERG is not only involved in the mining, metals, transport and energy business – but also in healthcare (via our new medical centre, purchased in 2020 – p. 38) and digital activities (p. 30). These have introduced their own, specialised regulatory requirements and risks. As a result, we have applied a new set of risk evaluations, enhanced relevant competencies within the Compliance team and strengthened our CPDD programme to reflect the specific risks these areas potentially pose.

Key elements of our Compliance Programme include:

- **Tone at the top:** The Chair of the Compliance Committee continues to participate in the Partnering Against Corruption Initiative's (PACI) 'The Future of Trust and Integrity' project. This includes a focus on behavioural change, organisational innovation and the adoption of technology.
- **Policies and procedures:** Our Code of Conduct, Group Supplier Code of Conduct and supporting policies and procedures are subject to regular review. Our Code of Conduct is binding on all our employees, managers and Board members.

In 2020, we:

- Rolled out the Group Supplier Code of Conduct (including communications to key suppliers, the integration of related terms into our standard contracts and the development of third-party onboarding documentation) (p. 88)
- Further updated our Counter Party Due Diligence (CPDD) Procedure to reflect internal and external developments
- Reviewed and revised our Code of Conduct (including the incorporation of new Values), which was approved in 2021
- Developed a Mauritius AML Policy and Procedure
- Continued the implementation of our revised Agents Compliance Policy and related management controls
- **Training and communication:** We communicate our compliance policies and procedures to business partners, governance body members and employees via e-learning, face-to-face engagement and onboarding assessments.

In 2020, our Compliance function developed (in partnership with the ERG Academy) the framework for our new 'Ambassador Institute'. This is aimed at integrating our compliance practices into our core business by ensuring process owners consciously 'own' compliance risks. Similarly, the Compliance function and ERG Academy also worked together to develop the ERG Compliance Training and Awareness Framework, which codifies our risk-based training approach.

Dedicated compliance training is delivered to two key groups of employees:

- General employees, who are provided with a course focused on the Code of Conduct
- Specialists involved in higher-risk processes (including CSI, procurement, sales and finance), who are provided with additional training focused on third-party due diligence, personal data protection, human rights and sanctions regimes (amongst other issues)

- **Sanctions Compliance Programme:**

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 of the Programme include:

- Management support and 'tone from the top'
- Risk assessment and monitoring (internal and external)
- Risk management strategy
- Policy and procedures
- Training
- Sanction checks against our CPDD database
- Scenario planning (to support business continuity)

- **Third-party due diligence:** Dedicated compliance managers conduct CPDD reviews across the Group, using reputable third-party information and compliance databases. These reviews cover sanctions violations, conflicts of interest, money laundering, bribery and corruption, data leakage, the infringement of human rights and other reputational issues/negative media coverage. This allows us to assign risk ratings in each case and identify appropriate mitigation actions.

In 2020, we conducted an intensive, three-day CPDD workshop involving Compliance officers across the group and facilitated by an independent, British law firm. This was with a view to providing ongoing training to our Compliance function in the context of the revised CPDD Procedure, and to establishing a 'beyond compliance' approach aligned with international best practice. The workshop produced three key outcomes:

- Deeper understanding of our CPDD programme and competencies, including a focus on enhanced screening approaches and additional risks linked to 'new' business areas (see p. 85), human rights, AML and other related issues
- The establishment of supporting CPDD data analytics to enhance the assessment/monitoring of agents, intermediaries, subcontractors and other counterparties, as well as related contract types
- Insight into relevant internal and external developments – as well as associated risks, opportunities and stakeholder expectations

This is a continuation of our regular series of internal workshops, which aim to ensure the ongoing development of our Compliance officers and the benchmarking of our efforts.

- **Whistleblowing:** We offer a confidential, anonymous Group Hotline operated by an independent third party (see <http://erg.ethicspoint.com>). This offers a safe and direct communication channel between ERG employees and our Compliance function. We are committed to protecting whistleblowers who report suspected violations in good faith and to maintaining confidentiality where requested

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 2020. 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.

Resolution of commercial and taxation issues in the DRC

During 2019, the Group engaged several specialist consultants in the DRC. The Group sought to verify that they complied with all applicable laws, including all applicable regulatory legislation. Additionally, an M&A transaction in the DRC entered into by the Group in 2018 was subject to adverse media reporting during 2020.

During the course of 2020, the Group launched an independent internal investigation led by a leading global law firm, supported by specialist forensic experts, and reporting directly to the Group's Audit Committee to cover both matters. The internal investigation is complete and closed, with key areas of risk addressed and no adverse findings having been discovered insofar as it relates to any potential wrongdoing by the Group or its employees.

Human rights

Under our Human Rights Policy, we are committed to respecting universally recognised human rights and labour standards (p. 98). These requirements are embedded in our Group Supplier Code of Conduct. We conduct ongoing risk assessments and monitoring, and have a robust action plan in place to prevent any form of bonded, forced or compulsory labour, or child labour.

We do 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. In addition to managing internal

human rights risks, we carry out supplier assessments during the CPDD process. Suppliers are selected based on their full compliance with our Human Rights Policy.

In addition, our regional compliance officers conduct office/asset human rights risk assessments at appropriate intervals. Any identified risks (and associated controls) are recorded in our regional and Group compliance risk registers and mitigation actions are implemented.

We conduct training amongst our employees on these expectations. Similarly, we carry out targeted audits and training of suppliers based on our risk assessment process.

ASM, cobalt and the DRC

While we recognise the valuable role that responsible artisanal and small-scale mining (ASM) can play in supporting livelihoods in Africa and elsewhere, none of our cobalt (or copper) production comes from ASM sources. This reflects the application of our Clean Cobalt Framework (p. 90), which is also helping to improve socio-economic conditions for local people and addressing child labour in nearby ASM communities.

For further information on how we ensure respect for human rights in relation to our cobalt value chain and ASM communities near our operations in the DRC, please see p. 61 and p. 92.

PERFORMANCE

In 2020, we:

- Provided onboarding and annual Code of Conduct training¹ to 1,308 employees (2019: 7,000), reflecting the suspension of training amid the COVID-19 pandemic. In addition, we delivered:
 - Additional training focused on third-party due diligence (586 employees), personal data protection (196 employees) and human rights (85 employees)
 - Dedicated anti-corruption training for 497 employees in Africa and Brazil
 - 75 communications on sanctions policies and procedures to 3,475 employees

- Communicated our compliance policies and procedures to business partners, governance body members and employees via e-learning
- Completed more than 14,000 third-party due diligence reviews (CPDD) (2019: 16,000) (p. 85)
- Received 319 reports and queries from our employees and business partners via our Hotline (2019: 368). These were largely focused on procurement procedures, employee relations and alleged fraud/theft

Furthermore, we were not subject to any:

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

PLANNING FOR THE FUTURE

Key areas of focus in 2021 (and beyond) will include:

- The implementation of our new, three-year Compliance functional strategy to support our 2025 Strategy – including a broader focus on business ethics and integrity
- The addressing of the limited gaps identified in the independent review of our Compliance Programme (p. 85)
- The further enhancement of our CPDD programme in the context of rapidly evolving international best practice and stakeholder expectations around responsible supply chains
- The ‘Self-testing’ of our compliance efforts across all parts of our business against international best practice – including ISO 19600 and ISO 37001
- The implementation of a Group-level human rights risk assessment



¹ Including human rights.



RESPONSIBLE VALUE CHAINS

Strategic context

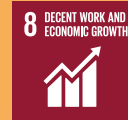
Our commitment to contribute to the socio-economic development and well-being of communities in our regions of operation extends beyond our own activities. We also seek to promote responsible behaviours amongst our business partners, including our contractors and suppliers.

In addition, we want to deliver assurance to our own 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 SUSTAINABLE DEVELOPMENT GOALS

UN SDG

ASSOCIATED UN TARGETS



8.7 Eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour
8.8 Protect labour rights and promote safe and secure working environments for all workers



12.2 Achieve the sustainable management and efficient use of natural resources
12.4 Achieve the environmentally sound management of chemicals and all wastes throughout their life cycle
12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices



16.5 Substantially reduce corruption and bribery in all their forms



17.16 Enhance the global partnership for sustainable development

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 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. The country is home to more than two thirds of global cobalt production and more than half of global reserves – yet faces considerable social and economic challenges that require active management.¹

KEY ISSUES AND INITIATIVES

Group Supplier Code of Conduct²

In 2020, we implemented our new 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 their subcontractors also agree to abide by its terms.

Implementation included:

- Distribution of the Group Supplier Code to key suppliers
- Integration of its requirements into our contracts
- Integration of its requirements into our supplier CPDD onboarding process

In 2021, we plan to implement supporting auditing and training activities across the Group – building on the systems already established at Metalkol RTR.

¹ US Geological Service, Mineral Commodity Summary – Cobalt, <https://pubs.usgs.gov/periodicals/mcs2021/mcs2021-cobalt.pdf>.

² ERG Supplier Code of Conduct: https://www.eurasianresources.lu/uploads/1/files/Supplier%20Code%20of%20Conduct%20document_English.pdf

KAZAKHSTAN ALUMINIUM SMELTER: WORKING TOWARDS COMPLIANCE WITH THE LME RESPONSIBLE SOURCING REQUIREMENTS

The aluminium we produce at KAS is an 'approved brand' of the London Metals Exchange (LME). From 2022, all LME-approved brands need to comply with the newly established LME Responsible Sourcing requirements (RS requirements). These requirements 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 addition, approved brands need to undergo independent, third-party audits

of their supply chain management practices and obtain OHSAS 18001/ISO 45001 and ISO 14001 certifications, or equivalent, by the end of 2023.

We are engaging with the LME ahead of these changes, and during 2020 reviewed relevant supply chain and risk management systems within the company. We also carried out an initial 'Red Flag Assessment', as defined by the LME. Furthermore, we plan to carry out a detailed assessment of our responsible sourcing practices, risk

frameworks and human rights impacts, which will be completed in 2021. To do so, we are engaging with LME-approved auditors, who will provide the report for submission to the LME.

This approach will not be limited to our KAS operations. It will form the basis of an overarching responsible supply chain management system that will be applied across the entire Group in the near future.



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 Counter-Party Due Diligence (CPDD) process (p. 85).

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 waste removal and disposal.

Such contractors are subject to initial safety compliance assessments and are subject to defined penalties for safety violations. Those involved in higher-risk tasks are subject to supplementary contractual oversight and control measures.

Responsible supply chain management in Africa

In 2020, we implemented the Group Supplier Code of Conduct across ERG Africa, following its initial rollout at Metalkol RTR in 2019 (where it supported our Clean Cobalt Framework). As with the rest of the Group, this included the distribution of the code to key suppliers, its integration into our terms and conditions, and the updating of our supplier CPDD onboarding process. In addition, we continued to carry out audits of, and training for, material suppliers at Metalkol – processes that will be rolled out to the rest of the Group.

Some of our suppliers in Africa offer higher than average risk profiles compared to Group norms. This includes DRC, South African and Zambian companies that recruit local people/nationals, transport hazardous materials, use labour brokers or provide security services.

Given the local context, we are willing to work with local suppliers constructively so they can meet our requirements. If any issue of concern is identified, we will first work with them to remediate it. It is only if this fails that we will then terminate the contract in line with the terms of the Group Supplier Code of Conduct.

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 on Responsible Supply Chains of Minerals 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

Our approach to a sustainable battery value chain

Delivering cobalt traceability and assurance...

Metalkol RTR is now the second largest cobalt operation in the world. The cobalt that we produce at Metalkol RTR is subject to our Clean Cobalt Framework, as well as third-party, international best practice standards and frameworks such as the Responsible Mineral Initiative's Responsible Minerals Assurance Process (RMAP) and the Cobalt Industry Responsible Assessment Framework (CIRAF). In addition, the operation actively promotes positive socio-economic change in local artisanal mining communities.

Global Battery Alliance battery passport

An in-development 'quality seal' to be carried across the value chain and deliver assurance to consumers. For more information see p. 92

Re|Source

A multilateral consortium developing an industry-wide blockchain platform to trace raw materials across the battery value chain. For more information see p. 92

WEF MMBI¹

A collaborative initiative to develop a platform to trace product environmental, social and governance performance across the value chain using blockchain technology. For more information see p. 74.

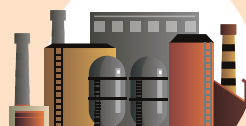
¹ World Economic Forum Mining and Metals Blockchain Initiative.

ERG'S CLEAN COBALT FRAMEWORK AT METALKOL RTR

- We comply with the OECD Due Diligence Guidance
- Our Clean Cobalt is free of child labour
- Our Clean Cobalt is traceable
- Our Clean Cobalt does not come from ASM
- We restore the environment
- We collaborate to promote sustainable community development
- We lead our industry towards more sustainable cobalt value chains



Miner



Crude refiner

STANDARD SETTING AT OUR OPERATIONS

In addition to our own, third party-assured Clean Cobalt Framework (see above), Metalkol RTR also applies the following third-party standards/frameworks:

RMAP

Plans are in place to apply RMAP, which will include independent third-party confirmation of – amongst other things – Metalkol's application of the widely-utilised and well-recognised OECD Due Diligence Guidance (p. 92).

CIRAF

Metalkol RTR carried out its first risk assessment against CIRAF in 2019 – covering issues ranging from human rights to the environment. All such risks continued to be actively managed in 2020 (p. 93).

ON-THE-GROUND CHANGE

Good Shepherd Sisters

ERG works with the Good Shepherd International Foundation to improve living conditions in local artisanal mining communities, especially for women and children. This includes a focus on supporting alternative livelihoods and the provision of education (p. 61).

Pact

In 2020, we concluded a project with international NGO Pact, the 'Children Out of Mining – Northern Kolwezi' programme. This helped 120 young artisanal miners aged between 15 and 17 complete six-month vocational training programmes ranging from welding to sewing (p. 62).

MULTILATERAL

Cobalt Action Partnership

The Cobalt Action Partnership (CAP – a collaborative Global Battery Alliance initiative chaired by ERG) is focused on supporting a sustainable cobalt supply chain and on 'harmonizing responsible sourcing projects and initiatives'. In 2020, it started to develop a Responsible ASM Framework (p. 92).

Fund for the Prevention of Child Labour in Mining Communities

ERG was one of the first contributors to the new Fund for the Prevention of Child Labour in Mining Communities – a GBA initiative administered by UNICEF (p. 62).

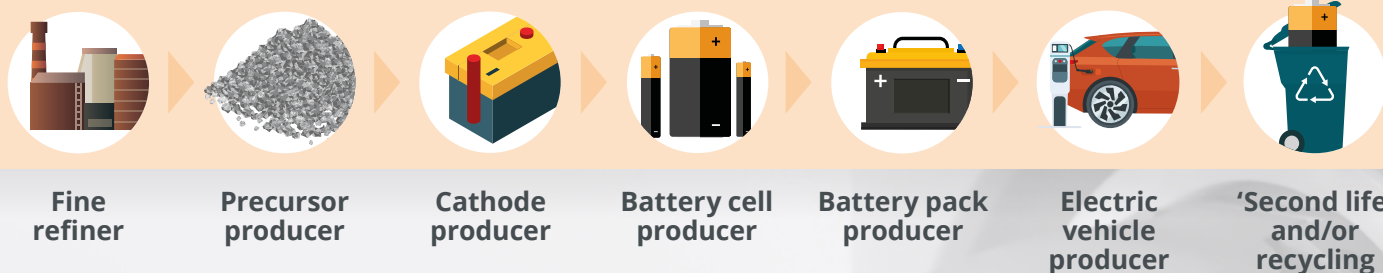
...across the battery value chain

We are working with a range of high-profile, international partners to ensure that this assurance is carried across the whole of the value chain, in a credible and transparent way. By doing so, we are helping ensure battery manufacturers can use our cobalt with confidence – and that consumers can be sure of the ethical credentials of their electric vehicles.

Standard-setting across the battery value chain

Tech platforms to support value chain transparency

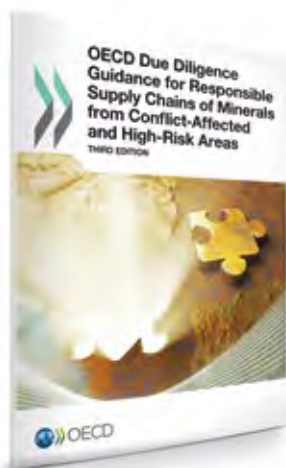
Cross value chain transparency and assurance



Note: Value chain example for batteries and electric vehicles.

OECD ALIGNED

Our Clean Cobalt Framework aims to ensure our compliance with the OECD Due Diligence Guidance, which is also embedded within the ERG Supplier Code of Conduct.



Delivering value chain assurance around our cobalt production

We apply a range of initiatives to help ensure that our customers can buy cobalt 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 (see p. 61)
- Working with others to set credible, cross-value chain assurance standards and achieve high levels of transparency

Clean Cobalt Framework

Metalkol RTR is playing a material role in satisfying global cobalt demand and helping drive the electric vehicle revolution. Our Clean Cobalt Framework¹ is the key means by which we seek to satisfy growing market demand for responsible mineral assurance with respect to the battery value chain. Furthermore, it is playing an active role in improving living conditions for local people living and working near Metalkol RTR. For further details, please see p. 90.

The Framework was fully operational in 2020, helping ensure (amongst other things) our conformance with the OECD Due Diligence Guidance. While we had planned a second independent, third-party Clean Cobalt Performance Report in 2020, this has been delayed temporarily due to COVID-19.

Responsible Minerals Assurance Process

In November 2020, ERG announced that Metalkol RTR would undergo the Responsible Minerals Assurance Process (RMAP) – a flagship programme of the Responsible Minerals Initiative (RMI). RMAP helps



WORKING WITH OTHERS TO DELIVER ASSURANCE ACROSS THE VALUE CHAIN – AND GENERATE POSITIVE IMPACTS

ERG and the Global Battery Alliance

ERG is an actively involved founding member of the Global Battery Alliance (GBA) – alongside companies ranging from BASF to Volkswagen, as well as governments and civil society. Furthermore, ERG's CEO, Benedikt Sobotka, is co-Chair of the Supervisory Council.

In 2020, the GBA focused its efforts on advancing two key initiatives:

- **Battery passport:** This is a “global solution for securely sharing information and data to prove responsibility and sustainability to consumers with a ‘quality seal’, while enabling resource efficiency across the battery life cycle.”² In 2020, the focus was on defining which aspects of participant performance would be integrated into the passport and communicated across the value chain – ranging from greenhouse gas (GHG) emissions to human rights. This is with the aim of developing a minimum viable product in 2021

- **Cobalt Action Partnership:** This is a collaborative GBA initiative with steering committee participants from the private sector, civil society and government – including, as of December 2020, the DRC Minister of Mines. It aims to “enable and support a sustainable cobalt supply chain”,³ while “harmonizing responsible sourcing projects and initiatives” – with a particular focus on artisanal and small-scale mining (ASM). In 2020, the partnership started work on the development of a Responsible ASM Framework and became technical advisor to the DRC government ASM regulatory body, ARECOMS.

Driving cobalt value chain transparency through the Re|Source project

ERG plays a pioneering role in promoting a sustainable value chain for battery materials. We strongly believe that higher transparency along the value chain will increase the sustainability of the battery industry. Therefore, we joined forces with other industry leaders – CMOC, Glencore,

Tesla and Umicore – in the Re|Source consortium. Re|Source is developing an industry-wide blockchain platform to trace the origins of the raw materials and track them along the entire battery value chain.

In 2020, we worked with our consortium partners to launch a pilot cobalt tracking project, spanning Tesla's entire value chain – from mine to electric vehicle. The pilot is due to be completed by the end of 2021 and will help inform the rollout of a fully developed solution. Implementation of the pilot programme is being supported by the Cobalt Institute and Responsible Mining Initiative (RMI), which are acting as strategic advisors.

Supporting the Fund for the Prevention of Child Labour in Mining Communities

ERG was one of the first contributors to the new Fund for the Prevention of Child Labour in Mining Communities⁴ – an initiative of the GBA that is administered by UNICEF. The Fund will be implemented in cooperation with government and civil society in the DRC. For further information, please see p. 62).

1 For further information, please see <https://www.eurasianresources.lu/en/pages/sustainable-development/clean-cobalt-initiatives#clean-cobalt>

2 <https://www.globalbattery.org/battery-passport/>

3 This includes a focus on safety and working conditions, gender equality, anti-corruption, human rights (including child labour and forced labour), the environment and broader sustainability standards.

4 <https://www.unicef.org/drcngo/en/press-releases/multi-stakeholder-initiative-address-child-labour-mining-communities>.

companies ensure the minerals in their supply chains are responsibly sourced. The process is based on an independent, third-party assessment of smelter/refiner management systems and sourcing practices to validate their conformance with RMAP standards – and the responsible procurement of minerals in particular.

The RMAP 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.

Cobalt Industry Responsible Assessment Framework

As a leading member of the Cobalt Institute,⁵ Metalkol RTR continues to apply the Cobalt Industry Responsible Assessment Framework (CIRAF).⁶ CIRAF is a management framework that supports enhanced risk management and reporting focused on the responsible sourcing and production of cobalt, including in relation to the following risk categories:

- Environment
- Occupational health and safety
- Human rights⁷
- Community

Having carried out our first risk assessment in 2019, these risks remained material in 2020. We continue to maintain policies and management systems to manage these risks, in line with the OECD Due Diligence Guidance.

PERFORMANCE

In 2020, ERG carried out more than 14,000 CPDD reviews before the conclusion or renewal of contracts – including more than 13,000 in Kazakhstan, 400 in Africa and 1,000 in other regions and corporate offices (2019: 16,000). Where these reviews have identified compliance risks, we have implemented mitigation measures, up to and including refusal to enter into a contractual relationship.

In addition, 100% of ERG Africa's counterparties involved in contracts with a value of more than US\$25,000 were assessed against the Group Supplier Code of Conduct. Our audits of 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.

First (virtual) customer audit of Metalkol RTR

In 2020, Metalkol RTR was subject to its first (virtual) customer audit, aimed at ensuring the cobalt we produce met their relevant responsible supply chain standards. This was carried out by third-party, LME-certified auditors. The audit did not identify any material issues other than the fact that the operation is still working towards certification to the ISO14001 environmental management system standard.

PLANNING FOR THE FUTURE

In 2021, we plan to:

- Implement a Group-wide auditing and training programme to further support the implementation of our Group Supplier Code of Conduct
- Establish an overarching, Group-level responsible sourcing framework that is aligned with the OECD Due Diligence Guidance
- Carry out a detailed human rights impact assessment at Kazakhstan Aluminium Smelter, as part of our efforts to meet the LME Responsible Sourcing requirements
- Strengthen assurance around the cobalt we produce at RTR Metalkol, including the implementation (once on-the-ground assurance activity can be resumed) of:
 - Our second, independent Clean Cobalt Performance Report
 - The independent, third-party RMAP process at the operation



⁵ Cobalt Institute: <https://www.cobaltinstitute.org/responsible-sourcing/industry-responsible-assessment-framework-ciraf/>

⁶ <https://www.eurasianresources.lu/en/pages/sustainable-development/clean-cobalt-initiatives#cobalt-institute> for further details.

⁷ As defined in Annex II of the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.



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 SUSTAINABLE DEVELOPMENT GOALS

UN SDG

ASSOCIATED UN TARGETS



16.5 Substantially reduce corruption and bribery in all their forms



17.16 Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships

17.17 Encourage and promote effective public, public-private and civil society partnerships

ERG's strategic economic role in Kazakhstan¹

2.4%

Contributes to approximately 2.4% of GDP² and is amongst the top five largest taxpayers in the country

25%

Represents approximately 25% of GRP³ in the Pavlodar region in terms of its direct, indirect and induced economic impacts⁴

>155,000

Direct, indirect and induced employment opportunities generated by ERG

ERG adheres to the highest principles of ethical business conduct with respect to its relationships with its host (and other) governments. These are set out in our Code of Conduct and compliance policies (p. 101).

KEY ISSUES AND INITIATIVES

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. Furthermore, we play a strategic economic role in Kazakhstan at the national, regional and local levels.

In this context, we engage constructively with the government with respect to our business plans, corporate strategy and support (where it fits with our business objectives) of the Government's broader national vision and strategy.

Key areas of engagement with the Government in 2020 included:

- **COVID-19:** Crisis management action taken by the Government to avoid, mitigate and recover from the impacts of the COVID-19 pandemic
- **Economic growth:** Economic growth and enhanced national capabilities, including through digital innovation (p. 30)

- **Green Economy:** Alignment with – and support of – the Government's 'Green Economy' concept, its climate change commitments and the new Environmental Code, which was adopted in January 2021 and came into force in July 2021 (p. 67)
- **Regional development:** The promotion of social development in our regions of operation – including through our memoranda of understanding with regional authorities (Regional MoUs) – and beyond (p. 56)
- **Belt and Road Initiative:** Participation in China's Belt and Road Initiative, which is focused on improving trade links with a wide range of countries in Eurasia and Africa, and promoting broader economic growth. This offers potentially significant opportunities to ERG in terms of attracting investment from China and increasing its exports to the country, which is placing strong focus on the development of advanced infrastructure such as 5G networks, intercity railways, ultra-high voltage power lines and charging stations for electric vehicles. This is likely to require increased volumes of copper, cobalt, ferrochrome, iron ore and aluminium. In this context, in the first half of 2020, China reportedly became Kazakhstan's largest export market.⁵

¹ Data taken from a 2019 study commissioned by ERG and carried out by EY to analyse ERG's impact at both a national level and within our four key operating regions.

² Gross Domestic Product.

³ Gross Regional Product.

⁴ Pavlodar is home to the majority of our operations, as well as 36% of our workforce.

⁵ Kazakhstan Today, Pandemic won't prevent China and Kazakhstan from jointly building "One Belt and One Road", 9 September 2020, https://www.kt.kz/rus/authors_column/_1377904429.html.



Government relations in Africa

The Government of the DRC holds (including via state mining company Gécamines) interests in a number of ERG subsidiaries in Africa, including Metalkol, 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 2020, other areas of engagement with the Government of the DRC included:

- **Community benefits:** Our delivery of benefits to local communities. This includes ongoing government oversight of our new Commitments Register and community social investment (CSI) plans (p. 59), as well as the consideration of new, government-proposed projects
- **Local employment:** Our employment and development of local community members and DRC nationals, including the prioritised employment of local community members where possible
- **Clean Cobalt:** The implementation of our Clean Cobalt Framework at Metalkol RTR (p. 90)

We remain committed to investing in the DRC – and to ensuring that the country and its people benefit from our operations there. This includes cobalt production at Metalkol RTR, as well as the exploration of options to support the commercial sustainability of Boss Mining.

We actively engage with all host governments in our countries of operation, including in Zambia and other jurisdictions where we have assets in care and maintenance.

PERFORMANCE

In accordance with our Code of Conduct, ERG does not, directly or indirectly, other than in exceptional circumstances approved in advance by the ERG Board of Managers, make political contributions. Any political contribution must be authorised in accordance with internal ERG policy and procedures, and applicable law. In 2020, ERG did not make any contributions (financial or in-kind) to political parties.

We continue to work with regional governments in Kazakhstan to support socio-economic development in our areas of operation. These include:

- Community projects implemented in partnership with regional governments (p. 56)
- Mandatory socio-economic and infrastructure development contributions in the regions required under our operating licences

PLANNING FOR THE FUTURE

In 2021, we plan to:

- Continue working to explore options that could support the commercial sustainability of our Boss Mining and Chambishi Metals operations
- Continue engaging with relevant government bodies in the Republic of Kazakhstan on proposed legislative changes to state investment support, environmental legislation and industrial policy, amongst other areas

Governance, management structures and risk management

CORPORATE GOVERNANCE

The shareholders of ERG (the 'Group') appoint the Board of Managers of the Group (the Board), oversee the financial performance of the Group 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 after founding shareholder Mr Alijan Ibragimov passed away in early 2021)
- Mr Bakyt Sultanov (representing the Government of the Republic of Kazakhstan)
- Mr Beibut Atamkulov (representing the Government of the Republic of Kazakhstan)

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 – and 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, the assessment

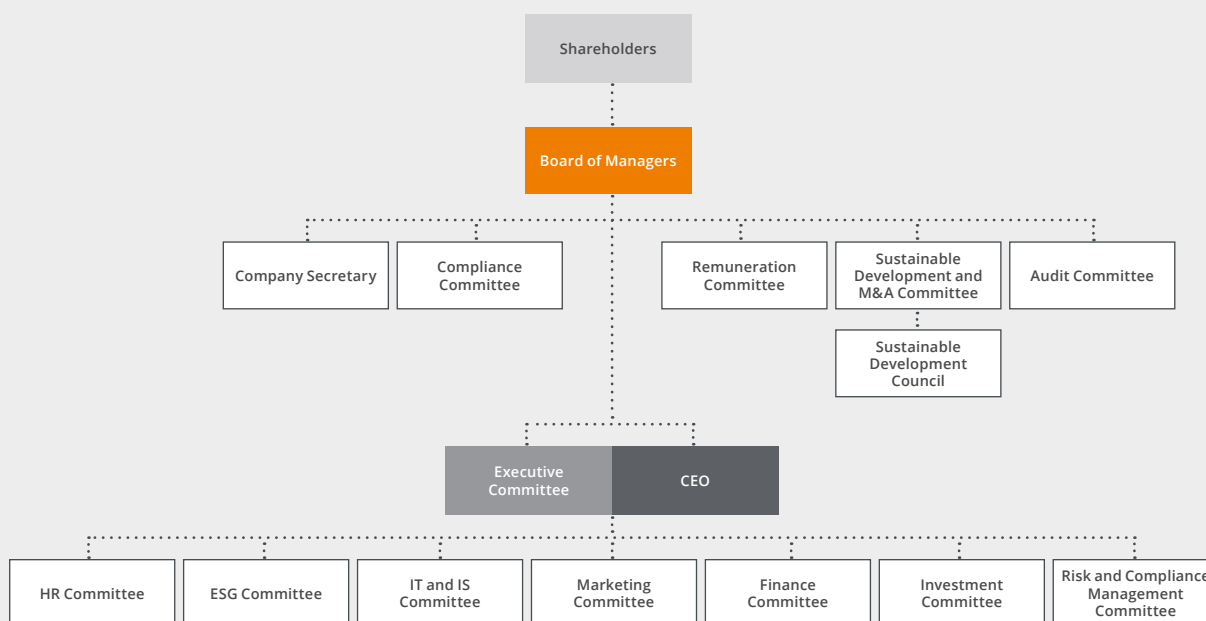
and mitigation of related risks, structuring and implementation of projects, and post-acquisition integration), as well as supporting Group-wide transformation and resilience (through the Sustainable Development Council (SDC)). The SDC acts as the working body of the Sustainable Development and M&A Committee, with a focus on supporting Group-wide transformation and resilience through strategic planning and strategy development

- **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.

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

Corporate governance structure



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

Business Sustainability leadership

In the first half of 2021, ERG established a new Environmental, Social and Governance (ESG) Committee, 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. Key areas of focus include:

- Group policy (and accountability)
- Goal-setting
- Analysis and monitoring of ESG-related projects
- Reporting
- The development of related competencies across the organisation

REGIONAL HEALTH, SAFETY, ENVIRONMENT AND COMMUNITIES MANAGEMENT

Kazakhstan

We have established the following committees, which are made up of senior regional management and the CEOs of our business units:

- Environmental Protection Committee
- Industrial and Occupational Safety 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 2020, our Environmental Protection Committee oversaw a range of issues in Kazakhstan, including the establishment of a working group to facilitate complex technical audits, the siting and installation of automated monitoring systems, and the replacement of filtration technology at Aluminium of Kazakhstan.

Similarly, the Industrial and Occupational Safety Committee examined a range of issues in Kazakhstan. These related to, for example, the development of enhanced procedures for higher-risk workplace activities, the automation of health and safety training, the improvement of employee medical examinations at Shubarkol and proposals to ensure the regulatory compliance of our buildings and structures.

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 meet to analyse and 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
- Human rights

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

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). Recommended ISO 31010 techniques are applied when assessing risk.

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.

In 2020, we advanced our management of risk through the:

- Implementation of the 'Monte Carlo' simulation method
- Implementation of a counterparties credit risk management process
- Pilot implementation of a new risk management module within our Capital Projects Integrated Project Management System
- Initiation of a project to implement risk-based repair planning using SAP software
- Homogenisation of internal control principles governing the preparation of regional-level financial statements
- Development of a Group-wide framework for the implementation of project risks insurance

- Initiation of an automated Hazard Identification (HAZID) management project in Kazakhstan. This will create a 'live' database of hazards, risks and associated mitigation actions, and assign relevant personal responsibilities and resources needed to manage these risks
- Further development of our capital project risk analysis approach and tools (including technological, engineering, budgeting aspects, etc.) and implementation of a new Project Risk module within our Integrated Project Management System portal

As the COVID-19 outbreak unfolded in 2020, the Group established a crisis management office, which developed a comprehensive set of measures to mitigate risks linked to COVID-19, while optimising Group liquidity and financial performance (please see p. 14 for further details on our response to COVID-19).

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, continuously working to prevent any injuries occurring in the workplace



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



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



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



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 in the Group, as well as with partners and customers

Key external management system standards applied by ERG in Kazakhstan

- ISO 45001 Occupational health and safety management system standard
- ISO 50001/EN 16001 Energy management system standard¹
- ISO 14001 Environmental management system standard
- ISO 9001 Quality management system standard
- ISO/IEC 27001-2015 Information security management system standard

HOW WE MANAGE OUR PEOPLE

See 'Helping our people thrive' on p. 34.

Our commitment

We are committed to the delivery of 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, Human Rights Policy and our Code of Conduct.

Our HSE Policy Statement commits us to:

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

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

- The provision of safe and healthy work conditions
- Respect for employees' rights to freedom of association and collective bargaining
- The provision of a secure 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, as well as our collective bargaining agreements.

¹ Energy generating assets only (i.e. Kazchrome, SSGPO, EEC and Aluminium of Kazakhstan) with the exception of 3-Energootalyk (purchased in 2018).

Implementation of our commitments

In Kazakhstan, our overall approach to employee management is defined by our business units' human resource policies and frameworks. Our Staff and Remuneration Committee in Kazakhstan, 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, our operations in Kazakhstan are certified to the ISO 45001 occupational health and safety management system standard.¹

In 2020, we continued the ongoing development of our integrated, risk-based occupational and process safety management system in Kazakhstan (p. 36).

We apply an SHS management system at our African operations that is informed by OHSAS 18001. In addition, our Metalkol RTR operation in the DRC plans to achieve certification to ISO 45001 in 2022.

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.

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

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, which conducts emergency scenario and crisis response planning, as well as related employee training. In 2021, we plan to review and update our emergency scenarios and conduct additional scenario-based planning and training.

HOW WE MANAGE COMMUNITY DEVELOPMENT AND WELL-BEING

See 'Community development and well-being' on p. 48.

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 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. 50-53).

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

We manage artisanal and small-scale mining (ASM) activity at our operations² in the DRC through an integrated SHS Management System, which includes:

- A dedicated ASM Policy
- Related ASM procedures, including those concerning:
 - Engagement with ASM communities and relevant governmental authorities
 - The responsible management of ASM activities (where these take place on our concessions). This includes procedures to ensure our operations do not purchase or profit from ASM-sourced ore

¹ With the exception of 3-Energoortalyk, which we purchased in 2018.

² ASM activity is present in the vicinity of all our DRC sites, with the exception of Frontier.

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.

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 broader socio-economic development of local communities (some of which are undertaken as part of our licensing obligations)

In Africa, our SHS management system provides a systematic 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

HOW WE MANAGE ENVIRONMENTAL STEWARDSHIP

See 'Environmental stewardship' on p. 64.

Our commitment

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

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

In Kazakhstan, our operations are certified to the ISO 14001 environmental management system standard. In addition, our Environmental Strategy in Kazakhstan (p. 66) is bringing our environmental practices in line with international best practice and is supporting our compliance with Kazakhstan's new Environmental Code.

Our Group policy is supplemented by ERG Africa's Safety, Health and Sustainability (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 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 2020, BAMIN continued to implement an Environmental Management System designed to manage the environmental aspects of both its mining and port operations. The system supports the proactive management of all environmental licence requirements, as well as relevant environmental and social management plans. The system also integrates a Geographic Information Systems platform, which enhances BAMIN's management effectiveness by visualising spatial data.

Implementation of our commitments

Our operations in Kazakhstan are certified to the ISO 14001 environmental management system standard.¹ In 2019, we started a process to centralise, homogenise and automate the collection of our environmental management data – including data relating to discharges, emissions, events, and monitoring results. This process is ongoing.

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.

In 2020, Metalkol RTR continued to pursue certification against the ISO 14001 environmental management system standard. This followed a gap analysis against the standard carried out in 2019. While the COVID-19 pandemic disrupted work in this regard, certification – which will cover each stage of the production process – is expected in 2021.

1 With the exception of 3-Energoortalyk (purchased in 2018) as well as our ERG Service company, which provides repair and maintenance services for ERG's sites in Kazakhstan.

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:

- Meetings in 2020 with environmental NGOs in both Aktobe and Pavlodar to present our Environment 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, the publishing of environmental data (including through the Pavlodar Aarhus Centre), tree planting, ecological training and other related activities

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

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

HOW WE MANAGE OUR BROADER ROLE IN SOCIETY

See 'Our broader role in society' on p. 78.

Our policy framework is based on our Values, Code of Conduct and all our 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, please see p. 86 and p. 89
- **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 corporate social responsibility (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

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, please see p. 88).


Our Group Tax Policy commits us to:

- Complying with all applicable laws, rules and regulations
- Taking account of the spirit as well as the letter of relevant tax laws and regulations
- In the context of transfer pricing:
 - Conducting all transactions between Group companies on an arm's length basis
 - Determining pricing in accordance with the nature of the economic functions performed by each company (including the use of capital) and following the specific methods and principles outlined in the OECD Transfer Pricing Guidelines and/or local transfer pricing laws
 - Retaining adequate documentation for each intercompany transaction to establish the terms and conditions of the transaction and to demonstrate that the company has complied with the transfer pricing principles set out above

Our Group Tax Policy is supported by the ERG Group Tax Code of Conduct, which was rolled out in 2019. It is aimed at ensuring the proper implementation of our Group Tax Policy, our legal compliance and the effective management of our risks.

What are ERG's most important issues and why?

Issue and relevant 2025 strategy goal	Relevance to ERG	Relevance to stakeholders	Relevant UN SDGs
Preparing our business for the future			
Growth and asset maintenance 2025 strategy goal: Balanced portfolio growth	<ul style="list-style-type: none"> Replenishment and growth of Mineral Resources and Ore Reserves, maintenance/renewal of existing projects and access to new commercial opportunities 	<ul style="list-style-type: none"> 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 	 
Technology, efficiency and digitalisation 2025 strategy goal: Efficiency in all that we do	<ul style="list-style-type: none"> Support of short-, medium- and long-term business sustainability – including through reduced costs, enhanced competitiveness and higher levels of productivity 	<ul style="list-style-type: none"> Impact on returns, the protection of shareholder/finance provider value and the sustainability of economic value distribution 	 
Organisational transformation 2025 strategy goal: Efficiency in all that we do	<ul style="list-style-type: none"> Support of medium- and long-term business sustainability – including through enhanced resilience, effectiveness and decision-making 	<ul style="list-style-type: none"> Impact on returns, the protection of shareholder/finance provider value and the sustainability of economic value distribution 	N/A
Financial resilience 2025 strategy goal: Financial stability	<ul style="list-style-type: none"> Ongoing ability of the business to successfully navigate external shocks and continue as a successful growing concern 	<ul style="list-style-type: none"> Continued ability to generate and distribute value, as well as the settlement of debts and payment of other financial liabilities and commitments 	N/A
Helping our people thrive			
Health & safety, including COVID-19 2025 strategy goal: Happy and professional team	<ul style="list-style-type: none"> The right thing to do – as well as the maintenance of our operational continuity, efficiency and the motivation of our employees 	<ul style="list-style-type: none"> Protection of employees and contractors from occupational injury, as well as occupational illnesses 	 
Talent attraction, development and retention 2025 strategy goal: Happy and professional team	<ul style="list-style-type: none"> Maintenance of our ability to generate value and to transform our business (see above) by attracting, developing, motivating and retaining high-quality, skilled employees 	<ul style="list-style-type: none"> The professional advancement of employees – and their ability to reach their full socio-economic, technical and personal potential 	 
Employee relations 2025 strategy goal: Happy and professional team	<ul style="list-style-type: none"> Nurturing of productive, positive workplace culture that directly supports our productivity, efficiency and profitability 	<ul style="list-style-type: none"> 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) 	 
Community development and well-being			
Community impacts 2025 strategy goal: Sustainable development of our host regions	<ul style="list-style-type: none"> Responsible management of ERG's impacts, as well as the maintenance of constructive stakeholder relations 	<ul style="list-style-type: none"> 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 	   

Issue and relevant 2025 strategy goal	Relevance to ERG	Relevance to stakeholders	Relevant UN SDGs
Community social investment 2025 strategy goal: Sustainable development of our host regions	<ul style="list-style-type: none"> Maintenance of our social licence to operate and the delivery of positive living standards for our workers in our local communities – 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 licences 	<ul style="list-style-type: none"> 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) and Africa (which lack formal employment opportunities and suffer from high levels of poverty) In addition, the addressing of social impacts associated with artisanal and small-scale mining, where it is carried out in an illegal or irresponsible way. 	
Environmental stewardship			
Managing impacts on air and water 2025 strategy goal: Sustainable development of our host regions	<ul style="list-style-type: none"> Legal compliance and the maintenance of our social licence to operate through the avoidance/minimisation of our negative environmental impacts 	<ul style="list-style-type: none"> 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 	
Energy and climate change 2025 strategy goal: Sustainable development of our host regions	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> The potential for ERG activities to contribute (over the long term) to climate change and its associated negative environmental and socio-economic impacts 	
Waste recycling and management, including tailings 2025 strategy goal: Sustainable development of our host regions	<ul style="list-style-type: none"> Compliance and operational continuity requirements around the physical and environmental management of large volumes of waste (including waste rock, tailings, sludges and industrial waste) – plus potential commercial opportunities around waste processing 	<ul style="list-style-type: none"> 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. 	
Our broader role in society			
Value generation and distribution 2025 strategy goal: Sustainable development of our host regions	<ul style="list-style-type: none"> The need to generate revenue and profits in order to sustain ERG as a going concern – and achieve future growth 	<ul style="list-style-type: none"> The positive impact of direct payments to suppliers, employees, capital providers, government and communities – including associated indirect and induced economic impacts 	
Integrity and compliance 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"> Compliance with relevant law, the maintenance of the trust of our partners and the protection of our reputation – as well as the enhancement of our operating environments 	<ul style="list-style-type: none"> The potential undermining of legitimate economic, social, political and business interests – as well as the undermining of the broader governance environment. In addition, the avoidance of association with such behaviour and related reputational harm 	
Responsible value chains 2025 strategy goal: Sustainable development of our host regions	<ul style="list-style-type: none"> 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 its own products are responsibly sourced 	<ul style="list-style-type: none"> The need to ensure workers and other stakeholders in the value chain 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 	
Government relations and policy 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"> 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 	<ul style="list-style-type: none"> 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 	

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

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)

Stakeholder details

Category and Stakeholder group	Engagement channel	Issues of interest	Relevant report section
Commercial			
Customers	<ul style="list-style-type: none"> • Interaction relating to product development • Responding to customer surveys 	<ul style="list-style-type: none"> • Supply stability/predictability • Product quality/price • Responsible production of cobalt • Broader value chain assurance (including the global battery value chain) 	Introduction, 1, 5
Suppliers, business partners and contractors	<ul style="list-style-type: none"> • Engagement through business associations and initiatives • Ongoing dialogue in relation to health and safety, training and auditing of performance • Group Supplier Code of Conduct 	<ul style="list-style-type: none"> • Contract stability • Predictable payments • Health and safety, anti-bribery and corruption, human rights and labour standards 	Introduction, 5
Financial			
Shareholders	<ul style="list-style-type: none"> • Updates to website, posting news, statements and operational reports • Meetings and road shows • Engagements focusing on financial services, their structure, volumes and value 	<ul style="list-style-type: none"> • Sustainable business development • Dividend generation • Corporate reputation • Cost performance 	Introduction, 1
Lenders		<ul style="list-style-type: none"> • Business performance • Successful project execution • Borrower risks • Interest payments and principal debt • Credit and debt arrangements 	Introduction, 1

Category and Stakeholder group	Engagement channel	Issues of interest	Relevant report section
Government			
National governments	<ul style="list-style-type: none"> Engagement regarding the issuing of permits, compliance with regulations and supervision of activities Development of regulations and public policy Development of business/government partnerships (e.g. Regional memoranda of understanding in Kazakhstan) Implementation of projects for socio-economic development 	<ul style="list-style-type: none"> Development of domestic skills and capabilities Innovative production approaches Legal/fiscal regime for mining in the DRC Kazakhstan's new Environmental Code and integrated permitting COVID-19 response coordination Project development, including infrastructure 	1, 2, 3, 5
Regional governments		<ul style="list-style-type: none"> Regional socio-economic development 	Introduction, 3
Regulatory bodies		<ul style="list-style-type: none"> Environmental impacts, including emissions to air Workplace fatalities and injuries 	2, 4
Society			
Local communities	<ul style="list-style-type: none"> Public hearings and meetings Socio-economic surveys Community feedback mechanisms integrated into our Community Town Initiative and ERG Town Programme in Kazakhstan Participatory Rural Appraisals in Africa Community social investment projects Information in local media 	<ul style="list-style-type: none"> Quality of life Employment generation Emissions to air Access to water Security and artisanal and small-scale mining in the DRC 	Introduction, 2, 3, 4, 5
NGOs, civil society organisations and media	<ul style="list-style-type: none"> Membership in industry sector initiatives Multi-stakeholder initiatives and partnerships Implementation of CSI projects Press releases and other publications on CSI projects, financial information, information on project development 	<ul style="list-style-type: none"> Conservation, biodiversity and environmental education Information access and transparency Business ethics The addressing of legacy impacts at Kisankala and Lenge in the DRC 	3, 5
Broader society		<ul style="list-style-type: none"> Environmental impacts Employment generation 	Introduction, 2, 4
Workforce			
Employees and their representatives	<ul style="list-style-type: none"> Ongoing dialogue between the management and teams Internal communication channels (Intranet, corporate publications, internal events etc.) Suggestions for ideas to improve productivity Meetings and surveys 	<ul style="list-style-type: none"> Conditions of employment Training and development Occupational health and safety External living conditions for employees and families Implementation of COVID-19 measures 	Introduction, 2
Senior managers	<ul style="list-style-type: none"> Ongoing dialogue through established industrial relations channels Collective bargaining agreements Accident investigations 	<ul style="list-style-type: none"> Skills development Professional development 	2

Key examples of participation in external initiatives

Level of engagement	Organisation
Group-level	<p>ERG participates in the following external initiatives:</p> <ul style="list-style-type: none"> • World Economic Forum (Strategic Partner Associate), including: <ul style="list-style-type: none"> – Global Battery Alliance¹ (founding member) and its related initiative, the Cobalt Action Partnership (participant on steering committee) – Partnering Against Corruption Initiative – Platform for Shaping the Future of New Economy and Society – Mining and Metals Blockchain Initiative (founding member) – Mining and Metals Governors – Mission Possible Platform: Aluminium for Climate – Preparing for the Future of Work in the Mining and Metals Industry¹ project (participant) • Responsible Minerals Initiative (Metalkol RTR has initiated the RMI's Responsible Minerals Assurance Process) • Cobalt Institute (member, plus ongoing application of the Cobalt Industry Responsible Assessment Framework) • Re Source project (founding member) • Fund for the Prevention of Child Labour in Mining Communities (co-founder and contributor) • International Chromium Development Association (member) • UN Global Compact (participant) • The Sustainable Markets Initiative (task force champion), as well as the related Terra Carta charter (signatory) <p>In addition, ERG is committed to adherence with the principles of the following external initiatives:</p> <ul style="list-style-type: none"> • Extractive Industries Transparency Initiative (EITI): We continue to engage with the EITI processes in our main countries of operation (DRC, Kazakhstan and Zambia) • UN Guiding Principles on Business and Human Rights: The Principles are embedded within the Group Supplier Code of Conduct • OECD Due Diligence Guidance on Responsible Supply Chains of Minerals: Our Clean Cobalt Framework aims to ensure our compliance with the Guidance, which is also embedded within the Group Supplier Code of Conduct • Voluntary Principles on Security and Human Rights: The Principles are embedded within the Group Supplier Code of Conduct
Kazakhstan	<p>ERG also participates in a range of national-level initiatives in our regions of operation, including:</p> <ul style="list-style-type: none"> • Eurasian Industrial Association • Association of Mining and Metallurgical Enterprises • National Chamber of Entrepreneurs of Kazakhstan 'Atameken' • Association of Taxpayers of Kazakhstan • Kazakhstan Foreign Investors' Council • Kazakhstan Business Council for Sustainable Development • Kazakhstan Association of Regional Environmental Initiatives "ECOJER"
DRC and Zambia	<ul style="list-style-type: none"> • Cobalt Institute (UK – Board representation) • Chamber of Mines of the DRC • Zambia Chamber of Mines • Zambia Institute of Human Resource Management
Brazil	<ul style="list-style-type: none"> • Brazilian Mining Institute • Bahia Ports User Association • Federation of Industries of the State of Bahia • Agency for Technological Development of the Brazilian Mining Industry • Brazilian Center for International Relations • Brazil China Business Council

¹ Since 2021, the Global Battery Alliance has operated independently from the World Economic Forum.

Key operational assets

Commodity/division	Number of key operational assets	Name of key operational asset	Principal activity	Country of operation
Ferroalloys	4	Aksu Ferroalloys Plant (TNC Kazchrome JSC)	Metals Processing	Kazakhstan
		Aktobe Ferroalloys Plant (TNC Kazchrome JSC)	Metals Processing	Kazakhstan
		Donskoy Gornoobogatitely plant ¹ (TNC Kazchrome JSC)	Mining and processing	Kazakhstan
		Kazmarganets (TNC Kazchrome JSC)	Mining and processing	Kazakhstan
Iron ore	2	Sokolovsko Sarbaiskoye Ore Mining and Processing Association JSC ²	Mining and processing	Kazakhstan
		Bahia Mineração S/A ³	Mining and processing	Brazil
Alumina and Aluminium	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 ⁴	Metals Processing	Kazakhstan
Other Non-ferrous ⁶	6	Metalkol SA ⁵	Mining and processing	DRC
		Frontier SA	Mining and processing	DRC
		Chambishi Metals PLC	Metals Processing	Zambia
		Boss Mining SAS	Mining and processing	DRC
		Todal Mining (Pvt) Limited	Mineral Exploration	Zimbabwe
		Sabot Management Limited ⁷	Transportation	Central and Southern Africa ⁸
Energy	4	Vostochny Open Pit Coal Mine (Eurasian Energy Corporation JSC) ⁹	Mining and processing	Kazakhstan
		Aksu Power Plant (Eurasian Energy Corporation JSC)	Power Generation	Kazakhstan
		Shubarkol Komir JSC	Mining and processing	Kazakhstan
		3-Energoortalyk JSC	Power Generation	Kazakhstan
Logistics	1	TransCom LLP	Transportation	Kazakhstan

1 Referred to as 'Donskoy GOK' throughout the report.

2 Referred to as 'SSGPO' throughout the report.

3 Referred to as 'BAMIN' throughout the report.

4 Referred to as 'KAS' throughout the report.

5 Referred to as 'Metalkol RTR' throughout the report.

6 Our logistics entity Sabot is included in Other non-ferrous as it primarily acts in a supporting capacity for our operations in Africa.

7 Referred to as 'Sabot' throughout the report.

8 There are several companies headed by Sabot and present across the various countries in Africa.

9 Referred to as 'EEC' throughout the report.

Units of measurements

US\$	US dollars
KZT	Kazakhstan tenge
kt	Thousand tonnes
mt	Million tonnes
GWh	Gigawatt
MW	Megawatt
ktpa	Thousand tonnes per annum
m ³	Cubic metre
km	Kilometres

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 2020 Sustainability Report.

GRI Standards 102: General disclosures

Disclosure No.	Disclosure description	Page(s)	Comment
Organisational profile			
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	94, 96-97	
102-6	Markets served	2-3, 6-7	
102-7	Scale of the organization	Inside front cover, 2-3, 6-7, 12-13, 24-27, 107	
102-8	Information on employees and other workers	Inside front cover, 44	
102-9	Supply chain	6-7, 18, 88-93	
102-10	Significant changes to the organization and its supply chain	15, 88-93	
102-11	Precautionary Principle or approach	10-11, 19, 64, 66-69, 70, 74, 98, 100	
102-12	External initiatives	14-15, 41, 55-63, 72, 88-93, 98, 106	
102-13	Membership of associations	106	
Strategy			
102-14	Statement from senior decision-maker	4-5	
102-15	Key impacts, risks and opportunities	6-7, 8-9, 10-11, 14-15, 16-17, 18-19, 20-21, 50-53, 102-103	
Ethics and integrity			
102-16	Values, principles, standards, and norms of behaviour	98-101, 106	
102-17	Mechanisms for advice and concerns about ethics	19, 86-87	
Governance			
102-18	Governance structure	96-97	
102-19	Delegating authority	96-97	
102-20	Executive-level responsibility for economic, environmental, and social topics	32, 97	
102-21	Consulting stakeholders on economic, environmental and social topics	20-21, 32, 96-97, 104-105	
102-26	Role of highest governance body in setting purpose, values, and strategy	32, 97	
102-29	Identifying and managing economic, environmental, and social impacts	20-21, 32, 97, 102-103	
102-30	Effectiveness of risk management processes	18-19, 97	
102-31	Review of economic, environmental, and social topics	20-21, 32, 97, 102-103	

Appendix continued

Disclosure No.	Disclosure description	Page(s)	Comment
Stakeholder engagement			
102-40	List of stakeholder groups	11, 104–105	
102-41	Collective bargaining agreements	44, 99	
102-42	Identifying and selecting stakeholders	104–105	
102-43	Approach to stakeholder engagement	20, 50–53, 55–57, 101, 104–105	
102-44	Key topics and concerns raised	20, 44–45, 50–53, 55 104–105	
Reporting practice			
102-46	Defining report content and topic boundaries	Inside front cover	
102-47	List of material topics	21, 102–103	
102-48	Restatements of information	83	
102-49	Changes in reporting	20–21	
102-50	Reporting period		1 Jan 2020 – 31 Dec 2020
102-51	Date of most recent report		October 2020
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	109–112	
102-56	External assurance	Inside front cover	This report has not been subject to third party assurance.

GRI Standards 200: Economic Disclosures

Disclosure No.	Disclosure description	Page(s)	Comment
Management approach			
103-1	Explanation of the material topic and its boundary	20–21, 102–103	
103-2	The management approach and its components	10–11, 12–13, 15, 18–19, 32, 80–83, 89, 94–95, 96–97, 99, 100, 101	
103-3	Evaluation of the management approach	18–19, 50, 55, 56–57, 80–81, 84–87, 89, 96, 104–105	
Economic performance			
201-1	Direct economic value generated and distributed	82–83	
Indirect economic impacts			
203-1	Infrastructure investments and services supported	45, 47, 55–63, 94	
203-2	Significant indirect economic impacts	45, 46, 52–53, 55–63, 80–83	
Procurement practices			
204-1	Proportion of spending on local suppliers	81, 83	
Anti-corruption			
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 (2019: 100%).
205-2	Communication and training about anti-corruption policies and procedures	85–87	
205-3	Confirmed incidents of corruption and actions taken		None
Anti-competitive behaviour			
206-1	Legal actions for anti-competitive behaviour, antitrust, and monopoly practices		None
Tax			
207-1	Approach to tax	67, 80–82, 101	
207-2	Tax governance, control, and risk management	19, 80, 101	
207-3	Stakeholder engagement and management of concerns related to tax	80–81, 86, 106	
207-4	Country-by-country reporting	82	

GRI Standards 300: Environmental Disclosures

Disclosure No.	Disclosure description	Page(s)	Comment
Management approach			
103-1	Explanation of the material topic and its boundary	20-21, 102-103	
103-2	The management approach and its components	10-11, 19, 32, 50-53, 64, 66-69, 70-73, 74-77, 89, 97, 98, 100	
103-3	Evaluation of the management approach	19, 50-53, 67, 68, 71, 73, 74, 89, 93, 97, 100, 101, 104-105	
Energy			
302-1	Energy consumption within the organization	72	
302-4	Reduction of energy consumption	16, 71	
Water and effluents			
303-1	Interactions with water as a shared resource	50-53, 60-61, 63	
303-2	Management of water discharge-related impacts	10-11, 50, 66-69	
303-3	Water withdrawal	7	
Emissions			
305-1	Direct (Scope 1) GHG emissions	72	
305-2	Energy indirect (Scope 2) GHG emissions	72	
Waste			
306-1	Waste generation and significant waste-related impacts	74-77	
306-2	Management of significant waste-related impacts	74-77	
Supplier environmental assessment			
308-1	New suppliers that were screened using environmental criteria	88-89, 93	

GRI Standards 400: Social Disclosures

Disclosure No.	Disclosure description	Page(s)	Comment
Management approach			
103-1	Explanation of the material topic and its boundary	20-21, 102-103	
103-2	The management approach and its components	10-11, 14-15, 18-19, 34, 36, 39, 40, 43, 44, 50-53, 56-57, 59-60, 63, 86, 88-89, 93, 94-95, 96-97, 98-100, 101	
103-3	Evaluation of the management approach	18-19, 33, 36, 37, 38, 39, 44, 45, 50-53, 55, 56-57, 86, 88-89, 93, 97, 104-105	
Employment			
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	38	
Labour/management relations			
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
Occupational health and safety			
403-1	Occupational health and safety management system	19, 36, 37, 39, 99	
403-2	Hazard identification, risk assessment, and incident investigation	19, 36–39, 97	
403-3	Occupational health services	14, 38, 39, 98, 99	
403-4	Worker participation, consultation, and communication on occupational health and safety	32, 36, 37, 97, 104–105	
403-5	Worker training on occupational health and safety	32, 36–39	
403-6	Promotion of worker health	14, 38, 39, 46, 47	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	37, 38–39, 88–89	
403-9	Work-related injuries	38–39	
403-10	Work-related ill health	14, 38–39	
Training and education			
404-2	Programs for upgrading employee skills and transition assistance programs	28–30, 32–33, 40–43, 45, 46	
404-3	Percentage of employees receiving regular performance and career development reviews	41, 43	
Non-discrimination			
406-1	Incidents of discrimination and corrective actions taken	46	None
Freedom of association and collective bargaining			
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	46	None
Child labour			
408-1	Operations and suppliers at significant risk for incidents of child labour	84, 86	
Forced or compulsory labour			
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	84, 86	
Security practices			
410-1	Security personnel trained in human rights policies or procedures	53	
Human rights assessment			
412-1	Operations that have been subject to human rights reviews or impact assessments	86, 87, 93	
412-2	Employee training on human rights policies or procedures	85, 87	
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	86, 93	
Local communities			
413-1	Operations with local community engagement, impact assessments, and development programs	50–53, 54–63	
413-2	Operations with significant actual and potential negative impacts on local communities	50–53	
Supplier social assessment			
414-1	New suppliers that were screened using social criteria	93	
Public policy			
415-1	Political contributions	95	None
Socio-economic compliance			
419-1	Non-compliance with laws and regulations in the social and economic area	87	None

GRI G4 Mining and Metals Sector Supplement Disclosures

Indicator	Indicator description	Page(s)	Comment
Labour/management relations			
MM4	Number of strikes and lock-outs exceeding one week's duration, by country		None
Local communities			
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. 51).
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	51, 53	
Emergency preparedness*			
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)	74, 99	
Artisanal and small-scale mining*			
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	51, 61–62, 90–93, 99	
Resettlement*			
MM9	Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process	52	
Closure planning*			
DMA	Report the scope of closure planning; its associated financial provision, and its coverage of health, safety, social, environmental, legal, governance and human resource aspects	45	
Materials stewardship*			
DMA	Report on programs and progress relating to materials stewardship	29, 73, 88–93	

* 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	86, 98, 99, 101, 106
Human rights	2: Businesses should make sure that they are not complicit in human rights abuses	50–53, 84–87, 88–93, 97
Labour	3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	44, 46, 98
Labour	4: Businesses should uphold the elimination of all forms of forced and compulsory labour	86, 88–93, 98–99
Labour	5: Businesses should uphold the effective abolition of child labour	61–62, 86, 88–93, 98–99
Labour	6: Businesses should uphold the elimination of discrimination in respect of employment and occupation	44, 46, 98
Environment	7: Businesses should support a precautionary approach to environmental challenges	10–11, 19, 64, 66–69, 70, 74, 98, 100
Environment	8: Businesses should undertake initiatives to promote greater environmental responsibility	10–11, 19, 66–69, 70–73, 74–77, 100, 106
Environment	9: Businesses should encourage the development and diffusion of environmentally friendly technologies	29, 30, 66–69, 70–73, 74–77
Anti-corruption	10: Businesses should work against corruption in all its forms, including extortion and bribery	19, 84–87, 88–89, 101

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.



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