

EURASIAN RESOURCES GROUP

ERG



Our mission

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

August 2022

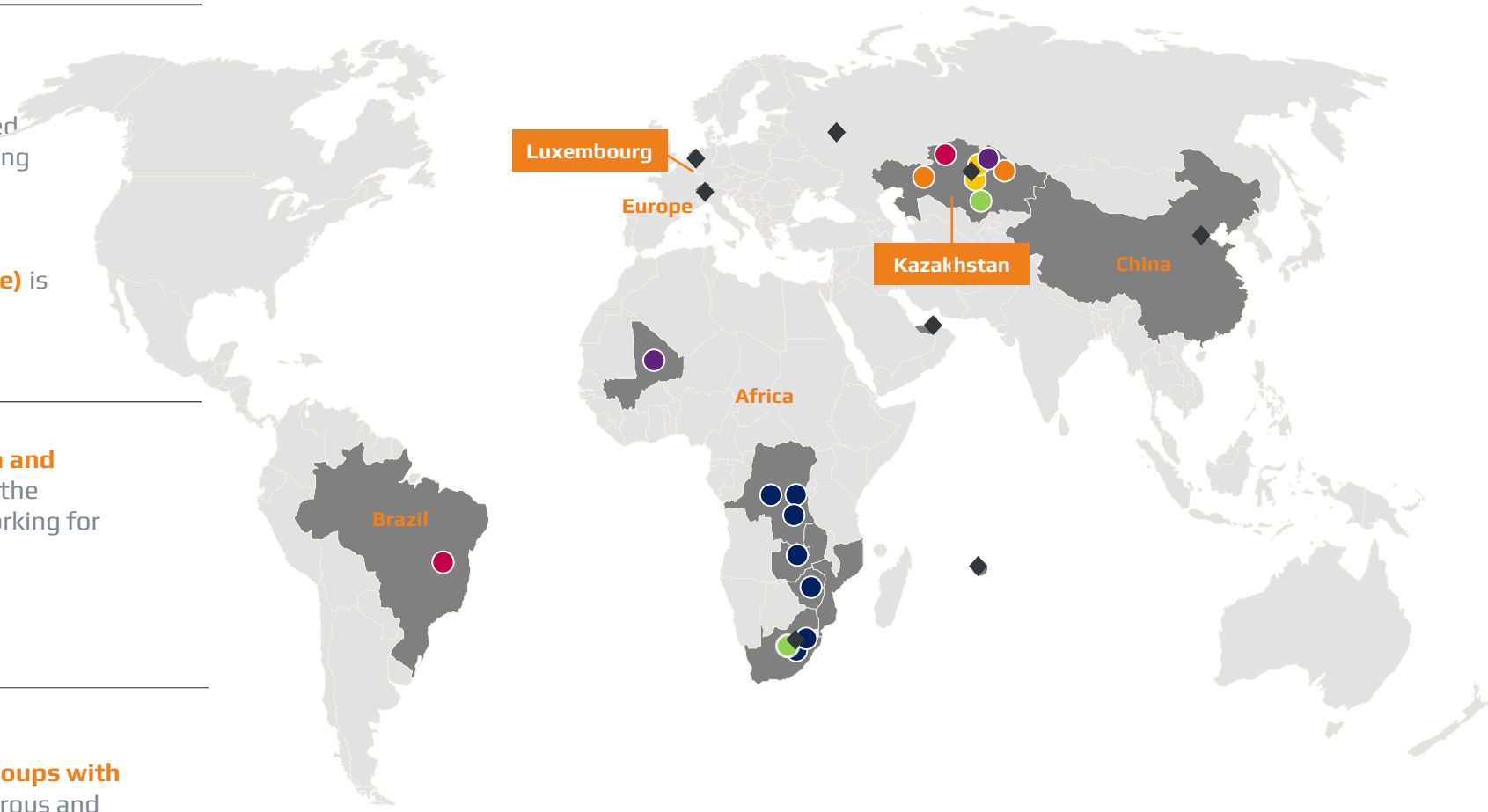
> ERG Today: International Metals and Mining Major with a Diversified Product Portfolio and Fully Integrated Production Cycle



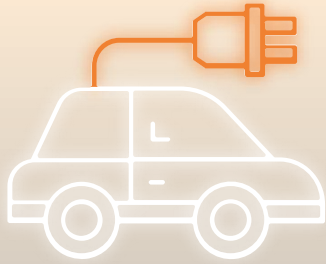
- **Eurasian Resources Group (ERG)** is a leading diversified natural resources group with integrated mining, processing, energy, logistics, and marketing operations
- **Headquartered in the Grand Duchy of Luxembourg**, ERG's main shareholder (**40% stake**) is the **Government of the Republic of Kazakhstan**

- Operating in **15 countries in Asia, Europe, Africa and Latin America** – one of the biggest employers in the global industry. **More than 75,000 people** are working for the Group
- **Supplying products to over 40 countries**

- **One of the most diversified mining & metals groups with a balanced product portfolio** in ferrous, non-ferrous and energy
- **Cost competitiveness:** global cost competitive industry leader of **high-carbon ferrochrome** production; enjoys its highly-competitive first-quartile position on the global **aluminium** cost curve; one of the world's most cost-efficient **copper and cobalt** producers



- Ferroalloys
- Alumina and Aluminum
- Other Non-ferrous (copper and cobalt – core business)
- ◆ Corporate offices
- Iron ore
- Energy
- Logistics



Electric vehicles

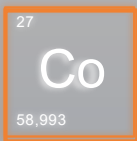


Clean sources of energy



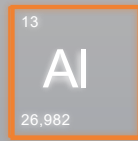
Infrastructure development

In the top 3 producers of ethically produced cobalt with the world's 2nd largest standalone production facility (**Metalkol RTR**)



Cobalt

KAS: the only supplier of high-grade primary aluminium in Kazakhstan and a major operator in the CIS region



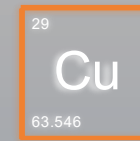
Aluminium

Kazchrome: the world's largest high-carbon ferrochrome producer by chrome content



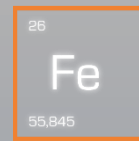
Ferrochrome

ERG Africa: an established and growing producer of copper



Copper

SSGPO: one of the largest suppliers of iron ore products in Eurasia



Iron ore



> ERG: Driving the Clean Energy Transition



- ERG is a Founding Member of the **Global Battery Alliance (GBA)**, a multi-stakeholder organisation, which has the goal of promoting and enabling a sustainable and circular battery value chain. The flagship project of the GBA is the development of a **Battery Passport**, a digital representation of a battery that conveys information about key ESG and lifecycle requirements for a sustainable battery. The Battery Passport initiative works together with the **Battery Pass Coalition**, a project that will develop rules for the content and technical interoperability of a battery passport that meets relevant EU regulations. GBA has over 100 members.



- ERG has also launched **ReSource**, a joint blockchain initiative with Tesla, CMOC, Glencore and Umicore, to help end-customers assess the ESG performance of the metals they use for batteries. As part of ReSource, ERG is using blockchain technology to trace responsibly produced cobalt and other battery materials in real operating conditions from the mine to the electric vehicle.



- Cobalt and copper are both essential for electrification, used in lithium-ion batteries powering EVs, electronic devices and consumer goods, from laptops and mobile phones to electric cars and trucks. Recently, PwC published a report showing that ERG is continuing to adhere to its **Clean Cobalt and Copper Framework**, ensuring its operations go beyond the globally recognised supply chain guidance of the OECD.



- ERG is investing 230 million US dollars in building a major **wind power plant** in Kazakhstan. The renewable energy facility will have a capacity of 155 MW, making it the most powerful plant in the Aktobe region, and is expected to reduce CO2 emissions by ca. 520,000 tons annually. It will supply energy to ERG's Kazchrome Donskoy GOK plant as well as neighbouring facilities and Kazakhstan more widely, thereby reducing the country's usage of coal.

> Three Core Regions for Production and Business Development Operations

Majority of production assets are located in **Kazakhstan** where ERG represents **one third of the metals & mining industry**. It is **one of the largest electricity producers (17% share of the country's market)** with 2 550 MW of installed electric power capacity at its main plant in Aksu. ERG is also **a large railway operator in Central Asia** with capacity of over 13 k units of railroad park and transportation of 58 mln tonnes per annum.



A strategic investor in **Africa** with copper and cobalt production facilities and main focus on the **Democratic Republic of the Congo**. This includes **Metalkol RTR, the world's second largest cobalt producer, and Frontier, a large scale producer of high quality copper concentrate**. ERG also holds a portfolio of development-stage assets in South Africa, Mozambique, Zimbabwe, and Mali.

In **Brazil**, ERG is developing an integrated mining and logistics project that comprises the **Pedra de Ferro high-grade iron ore mine, the Porto Sul multi-use deep water port, and Stage 1 of the FIOL¹ transcontinental railway**. Pedra de Ferro has started commercial operations in January 2021 and should make the State of Bahia the third largest iron ore producer in the country. In 2021, the Group has also **won an auction to complete and operate the first stretch of the FIOL railway**.

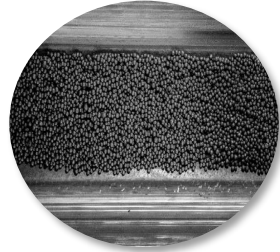


1. The West-East Integration Railway



Ferroalloys

Ferroalloys: 1,540kt



Iron Ore

Iron ore concentrate and pellets (SSGPO): 14,714kt
Iron ore (BAMIN): 1,008 kt

+25.5% y-o-y
saleable cobalt
hydroxide
production



Alumina and Aluminium

Alumina: 1,315kt
Aluminium: 262.4kt



Other non-ferrous

Saleable copper metal: 94.8kt
Saleable copper concentrate: 102.4kt
Saleable cobalt hydroxide: 20.7kt

+18.1% y-o-y
saleable copper
metal production



Energy

Coal: 29,891kt
Electricity: 16,000 GWh



Logistics

Goods transported: 52,139kt

+12.2% y-o-y
saleable iron ore
concentrate
and pellets
production

ERG's International Partnerships



G E B A BATTERY
PASSPORT

> Key International Organisations, Partnerships and Frameworks where ERG is a Member

WE SUPPORT



Foreign Investors' Council
chaired by the President
of the Republic of Kazakhstan



IBRAM
INSTITUTO BRASILEIRO DE MINERAÇÃO



Cobalt Institute



> The Global Battery Alliance (GBA) with over 100 international stakeholders as the members and where ERG is a Founding Partner and whose CEO is Co-Chair



- ERG was one of the first organisations to seek collaborative solutions for the supply chain of the global li-ion batteries sector
- It supported the World Economic Forum to mobilise the Global Battery Alliance, a public-private multi-stakeholder collaboration
- The GBA was officially launched in 2017 in New York and includes many international organisations such as the World Bank Group, UNICEF, OECD, UNEP, African Development Bank, leading automotive OEMs, mining and metals majors and tech giants.

Vision - Develop an inclusive, innovative and sustainable battery value chain to power the Fourth Industrial Revolution

- ✓ In 2019 the GBA published, jointly with McKinsey, a landmark 2030 Vision report outlining a sustainable and circular battery value chain - a major driver to meet the Paris Agreement targets.
- ✓ At the WEF jubilee 50th annual meeting in Davos, 42 members of the Alliance have endorsed 10 guiding principles to foster the creation of a sustainable battery value chain. The 42 signatories included businesses representing annual revenue of close to a trillion US\$, along with international organisations and global NGOs.
- ✓ The GBA also launched the Battery Passport concept. The Passport will work as a type of quality seal on a global digital lifecycle platform for sharing value chain data of batteries. The Battery Passport demo is closed to its launch.



Corporate members



Governments, International Organisations and NGOs





Re | Source

A consortium to tracing blockchain solutions in real operating conditions

- Tracing responsibly produced cobalt and other battery materials from the mine to the electric vehicle
- A unique industry partnership between EV supply chain majors
- Founded by CMOC, ERG and Glencore; joined by Tesla, Umicore, Norilsk Nickel, Cobalt Institute



Fund for the Prevention of Child Labour in Mining Communities – A Global Battery Alliance Collaboration

Administered and programmed by UNICEF

- Addressing the root causes of child labour
- Supporting the UN SDGs
- With initial target to raise US\$21 mln over a three-year period

ERG is one of the initial funders

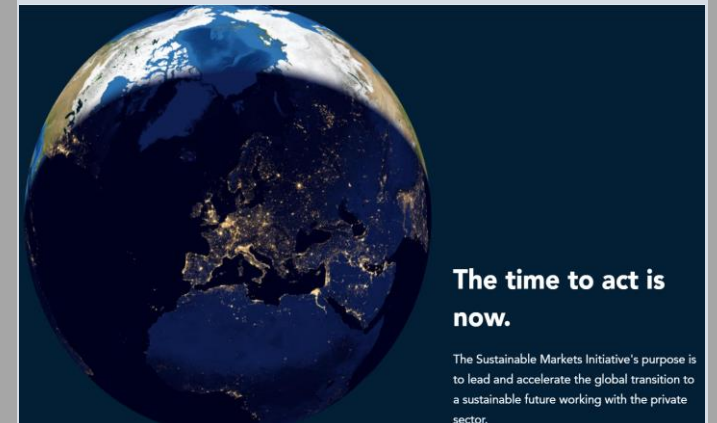


‘Terra Carta’ under leadership of HRH The Prince of Wales and the Sustainable Markets Initiative

Provides a roadmap to 2030 moving towards a sustainable future

- Rooted in the transformative power of Nature and the energies, resources and innovation of the private sector

ERG became one of the first 25 world-leading organisations to support the Initiative



Key Assets



Operational overview



Kazchrome

The world's largest high-carbon ferrochrome producer by chrome content

In 2022, Kazchrome received Platinum sustainability award from EcoVadis

- **Facility description:** Chrome mining and processing facilities in Khromtau, ferroalloy plants in the cities of Aktobe and Aksu, manganese mining and processing facilities in Karaganda region
- **Products:** High carbon ferrochrome and other ferroalloys, refined ferroalloys (medium and low carbon), ferrosilicochrome, ferrosilicomanganese, ferrosilicium
- **Capacities:**
 - Donskoy GOK – 5.64 mtpa of chrome ore
 - Aktobe ferroalloy plant – 0.63 mtpa of ferroalloys
 - Aksu ferroalloy plant – 1.12 mtpa of ferroalloys
 - Kazmarganets mining enterprise – 0.48 mtpa of manganese ore and 0.16 mtpa of manganese concentrate
- **Key markets:** Japan, China, Korea and Europe
- **Key investment project:** construction of the “10 years of Independence of Kazakhstan” underground mine



Operational overview



Metalkol Roan Tailings Reclamation (Metalkol RTR)

A facility reprocessing cobalt and copper tailings from historical operations in the area

The world's second largest standalone cobalt producer (2021) and a large producer of copper, one of the largest suppliers of cobalt to China

Facility description: a hydrometallurgical plant reprocessing cobalt and copper tailings previously deposited in the Kingamyambo Tailings Dam and Musonoi River Valley. The two tailings deposits host ~ 119.4mt of resources at average grade of 0.31% cobalt and 1.46% copper.

Products: cobalt hydroxide and copper cathode

Capacity (Phase 2): more than 20ktpa cobalt and 105 ktpa copper

Sustainability: launched Clean Cobalt Framework in 2018, which was extended in 2021 to also include copper and which was for the second time independently assured by PwC, underscoring commitment to the production and sourcing of clean cobalt and copper beyond the globally recognised OECD Due Diligence Guidance and with zero tolerance for child labour in the related supply chain. Transparency and traceability is also being achieved through the application of blockchain technology.

Location: 20km west of Kolwezi, Lualaba province in the Democratic Republic of the Congo

Operational overview



Kazakhstan Aluminium Smelter (KAS)

The only producer of high-grade primary aluminium in Kazakhstan

- **Founded in 2007**
- **Facility description:** processing and smelting plant
- **Capacity:** more than 250 ktpa
- **Key Markets:** Southern Europe, Turkey, Kazakhstan, Russia and other CIS countries
- **Full integration with 'Aluminium of Kazakhstan'**
- **Location:** Pavlodar

Aluminium of Kazakhstan (AoK)

The only producer of alumina in Kazakhstan

- **Capacity:** more than 1.5 mtpa
- **Location:** Pavlodar plus open pit mining of bauxites in the Kostanai region (KBRU mines)
- **Key Markets:** Kazakhstan (KAS), Russia, China

Operational overview



SSGPO

Operations comprise mining and processing to produce iron ore concentrate and pellets

- **Founded in 1954**
- **Facility description:** Open pit mines – Sarbai, Kurzunkol, underground mining in Sokolovski mine, processing plant
- **Products:** iron ore concentrate, pellets
- **Capacity:** 40 mtpa of iron ore, 8 mtpa of concentrate, 8 mtpa of pellets
- **Key markets:** Kazakhstan, China
- **Location:** Rudnyi, Kostanai region

Kachary Ruda

- **Founded in 2021**
- **Facility description:** Kacharsky open pit mine
- **The Smart Mine project** aimed at improving productivity has been successfully implemented and rolled out at Kachary Ruda
- **10 mln tons of iron ore** produced in 2021

Operational overview



Frontier Mine

Frontier mine comprises an open pit copper mine and processing facilities to produce copper sulphide concentrate

Facility description: 10mt of high grade copper sulphide ore are treated annually through a conventional flotation circuit to produce high quality copper concentrate with high sulphur and iron ore content and low impurities. Frontier hosts mineral resources of 163.5Mt at 1% copper grades.

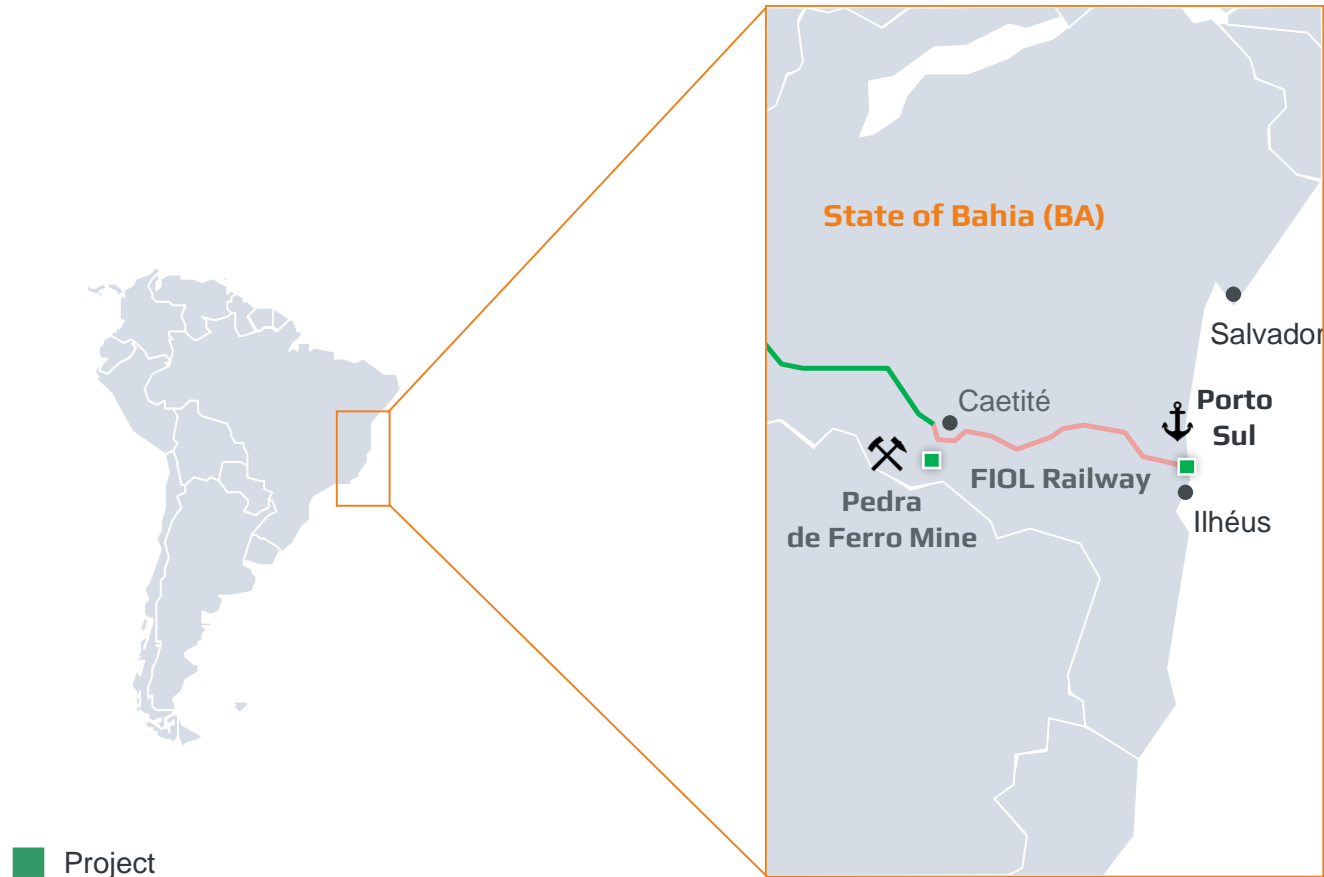
Products: Copper sulphide concentrate

Capacity: ~100ktpa copper contained in concentrate

Key Markets: domestic and export markets

Location: Kishiba in the territory of Sakania in the Haut-Katanga Province, Democratic Republic of the Congo. The mine is within 2km of the Zambian border.

- A large, fully integrated iron ore mine, deep-water port and a stretch of the transcontinental railway project
- BAMIN is making the State of Bahia the third largest iron ore producing region in Brazil
- Some of highest grade and lowest impurity iron ore in the world, helping ERG's customers to very substantially reduce their carbon footprint



■ Project

Pedra de Ferro Mine near Caetité

- Commercial operations commenced in Jan 2021 and by the year-end BAMIN has already produced more than 1 mtpa of iron ore
- 535 Mt reserves at 42.4% Fe
- Total mine life of 30 years
- High quality products: direct shipping ore (DSO) and direct reduction pellet feed (DRPF)
- Anchor shipper on the FIOL railway and Porto Sul

Porto Sul

- Multi-use deep-water port near Ilhéus, capable of handling Capesize vessels up to 220,000 dwt
- Sole import/export point for the new West-East Integration (FIOL) Railway
- Initial use for dry bulks (iron ore, soy, grain and fertilizer)
- Design capacity of 26 mtpa, expandable to >40 mtpa



Operational overview



Eurasian Energy Corporation (EEC)

One of the largest electricity producers in Kazakhstan

- **Founded in 1996**
- **Facility description:** extraction of thermal coal, production of electricity
- **Capacity:** 20 mtpa of coal, 2,550 MW of installed electric power capacity
- **Key Markets:** Kazakhstan
- **Locations:** Vostochny open pit coal mine (Pavlodar region), Aksu power plant (Pavlodar region)

Shubarkol Komir

Coal and semi-coke producer

- **Founded in 1985**
- **Facility description:** extraction of thermal coal, production of semi coking coal
- **Capacity:** 10,3 mtpa of coal, 240 ktpa of semi-coke
- **Key Markets:** Kazakhstan, Kyrgyzstan, Uzbekistan, Belarus, Poland
- **Location:** Shubarkol, Karaganda region

Operational overview



Transportation group TransCom

One of the largest logistic operators in Kazakhstan

- **Founded in 1991**
- **Facility description:** transportation and logistics, freight forwarding services
- **Capacity:** 50 million tonnes of cargoes per annum
- **Locations:** TransCom (Almaty), Bereke 2004 (Pavlodar region), Transremvagon (Kostanai region)

SABOT

Logistic operator in Africa

- North-South Corridor logistics specialist owned by ERG Africa
- More than 40 years of industry experience
- A fleet of more than 450 vehicles and 13 depots across four countries

ERG Recycling

- **Founded in 2019**
- **Facility description:** mining and treatment of natural resources, waste, man-made mineral formations and secondary raw materials; disposal of industrial by-products and waste; commerce and agent activities as well as trade and procurement; production and sale of goods, performance of works and provision of services to enterprises, organizations and citizens



ERG Capital Projects

- **Founded in 2019**
- **Facility description:** preparing and implementation of the Group's investment projects in Kazakhstan; managing project risks, developing plans to reduce key uncertainties and improve safety, developing optimal technological business solutions for the Group's enterprises, as well as developing a strategy for the implementation of large capital projects.



ERG Exploration

- **Founded in 2020**
- **Facility description:** carrying out a full cycle of exploration works - from design, field and geophysical works, well drilling to field modeling and preparation of reports in accordance with international standards; searching and studying of mineral deposits, primarily bauxite, chromium, manganese and other priority metals



**Sustainable
Development**



МУЗЫКА ӘЛЕМІ

БАЛАЛАР КОНЦЕРТІ

ASTANA
OPERA

КОНЦЕРТ ДҰА ДЕТӨА

В МИРЕ МУЗЫКИ

> ERG carries out a comprehensive digital transformation program



The **ERG Group-level Digital Strategy** places particular focus on the development of key employee capabilities (including with respect to robotisation and big data), ensuring cost-effective digital investment decisions and the building of adaptive/modular digital architectures to support our broader business and production processes.



ERG is working closely with the Astana International Financial Center (AIFC) to establish an AIFC-based **Fourth Industrial Revolution Center** in collaboration with the World Economic Forum.



ERG is a partner in the Digital Ventures fund. The Fund engages and supports innovative start-ups to develop an ever-growing range of new solutions that can benefit both ERG and a wide range of stakeholders. Together, the services delivered by the Fund's portfolio of companies form the **Aitu Digital Ecosystem**.



ERG, CMOC, Glencore, Tesla and Umicore are piloting ReSource, a solution to trace responsibly produced cobalt and other battery metals from the mine to the electric car. Tested in real operating conditions, from upstream production facilities in the Democratic Republic of the Congo (DRC) to downstream electric vehicle production sites, after the pilot in 2021 the roll-out of the final solution was scheduled for 2022.



> Sustainable Development | Some of the Key Success Stories (1)



Student Entrepreneurship Ecosystem Programme

- A **multi-year initiative to develop entrepreneurial skills** throughout our operating regions
- **Joint implementation with the Kazakhstan Tel-Aviv University Friends Association and the Almaty Management University**
- **5000+ students participated** across Kazakhstan, **hundreds of business ideas** were given and dozens been implemented
- **Nine Kazakhstan universities and a centre for higher education**



Establishment of STEM Laboratories

- Innovative institutions to increase **access to modern teaching methods and educational technologies for school children** in remote operating regions in **Kazakhstan**
- The programme is being implemented in **partnership with local educational authorities**, including the Education Department of Astana, and **educational charity Bolashak Engineering**
- The **first Laboratory opened in 2018** at a secondary school near Nur-Sultan



“Native town” project

- CSR project, which is based on a **culture of participation** and the **principles of participatory (proactive) budgeting**.
- ERG’s corporate initiative became a **country-wide project** implemented across Kazakhstan. The project operators are the Ministry of Industry and Infrastructure Development and the Association of Urbanists of Kazakhstan.
- **Citizens can offer their ideas, participate in the design of the appearance and functionality of the urban facilities in their hometowns.**



**GOOD SHEPHERD
INTERNATIONAL
FOUNDATION
ONLUS**

Partnership with the Good Shepherd International Foundation (GSIF) to support the Bon Pasteur Alternative Livelihood programme*

- A funding agreement to support the programme at **Kolwezi in Lualaba Province**.
- The programme is aiming to **help break the cycle of violence and abuse against children and women in artisanal mining communities** and improve their living conditions.
- **More than 3,000 children** have already been **protected** from the worst forms of child labour.



Launch of an inaugural Bon Pasteur child protection centre in Kolwezi*

- **Launched in September 2019**
- **Has capacity to take about 1000 children out of mining and provide free education, nutrition and other services.**
- **Part of ERG's partnership with the GSIF.**



Support for "Children out of Mining-Northern Kolwezi", an initiative carried out by international development organisation Pact

- The initiative is aimed to **raise awareness and strengthen child protection.**
- Implementation of a range of **tailored capacity-building interventions** focused on tackling the risks faced by children in artisanal and small-scale mining (ASM) in the **DRC.**

* Photos courtesy of the Good Shepherd International Foundation/Nyokabi Kahura

> ERG's Clean Cobalt and Copper Framework



We are committed to the responsible production of cobalt and have developed the ERG Clean Cobalt Framework, **launched at Metalkol RTR in 2018**



Our goal is to ensure that our cobalt is produced responsibly and to address risks associated with human rights violations and unethical business practices, in particular child labour.



We also seek to harness opportunities to drive sustainability along the cobalt value chain, especially in partnership with others.



The Framework aims to drive positive outcomes for local communities in the DRC as well as wider global society by pursuing **seven commitments**:



Compliance with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals



Our cobalt is free of child labour



Our cobalt is traceable



Our cobalt does not come from artisanal and small-scale mining (ASM)



We restore the environment



We collaborate to support sustainable community development



We support our industry towards more sustainable cobalt value chains



In 2021, the Framework was extended to also incorporate copper

Assurance of the performance report on the implementation of the ERG Clean Cobalt Framework at Metalkol by PwC.



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