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 Zijin



紫金矿业
ZIJIN MINING

MINING FOR A BETTER SOCIETY

Cape Town · South Africa

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I. Overview of Zijin Mining

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Zijinshan open pit

Overview of Zijin Mining

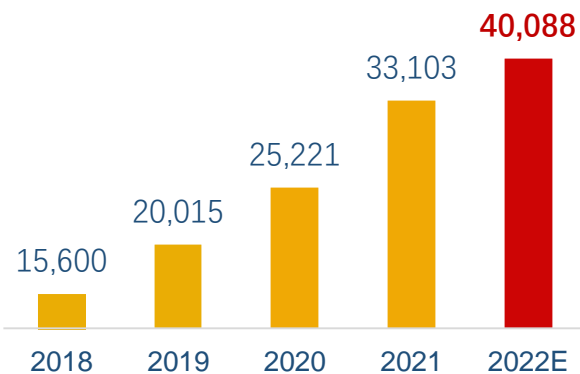


- Listed in Hong Kong and Shanghai; market cap: US\$ 45+ billion; number of employees: 48,000+
- Operating and building mining projects in 15 countries; one of the world's major producers of copper, gold and zinc

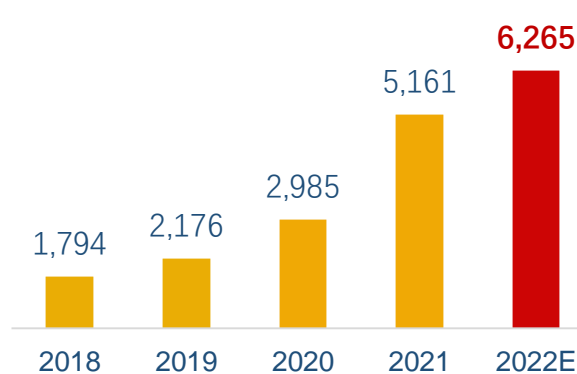
Financials from 2018 to 2022



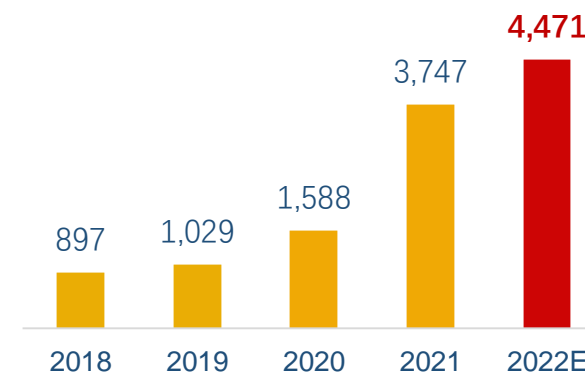
Operating income/USD 1 mn



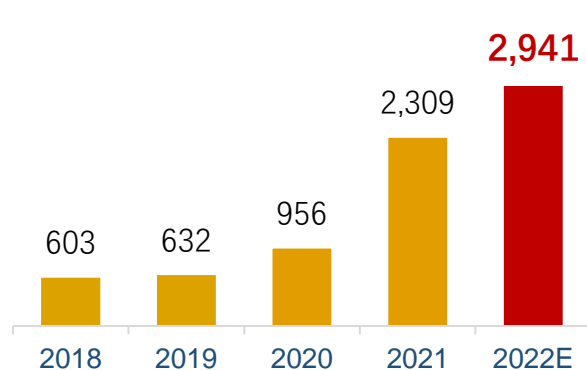
EBITDA/USD 1 mn



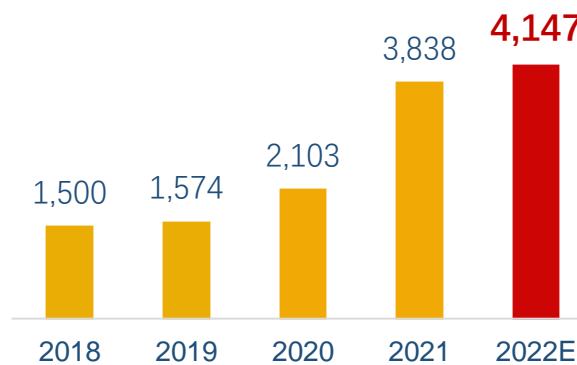
Earnings/USD 1 mn



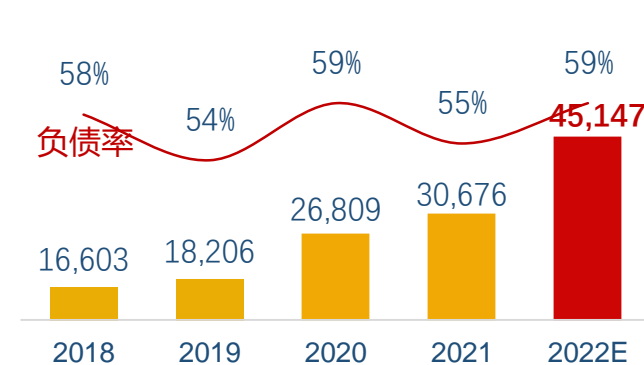
Net attributable profit/USD 1 mn



Operating cash flow/USD 1 mn



Total assets/USD 1 mn



Forbes

No. **325** in the 2022 Forbes Global 2000 List

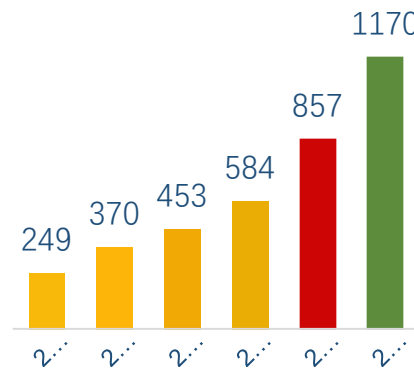
财富
FORTUNE
CHINA

No. **407** in the 2022 Fortune 500 List

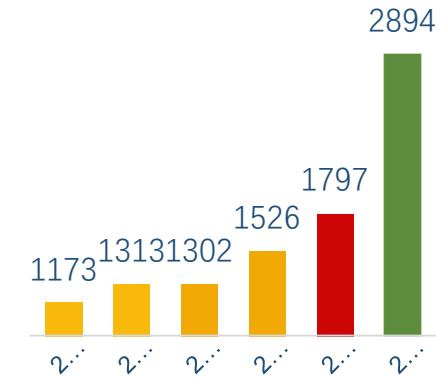
2022年

- **Mined copper: 860,000 tonnes**
- **Mined gold: 1.8 mn ounces**
- **Mined zinc: 450,000 tonnes**
- **One of the world's top 10** producers of copper, gold and zinc
- Aim to produce **100kt** of LCE by 2025

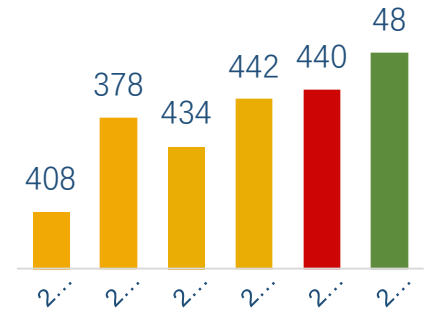
Mined copper/1,000 tonnes



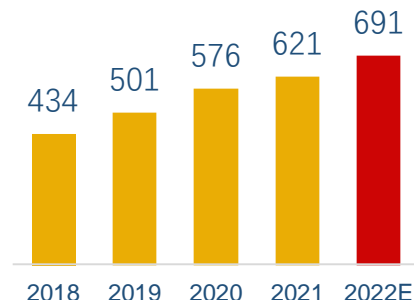
Mined gold/1,000 ounces



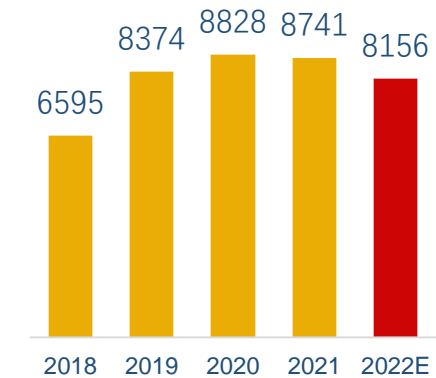
Mined zinc and lead/1,000 tonnes



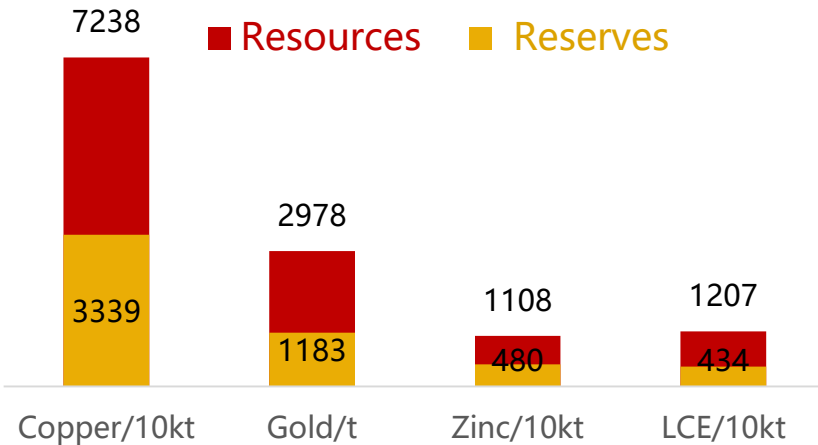
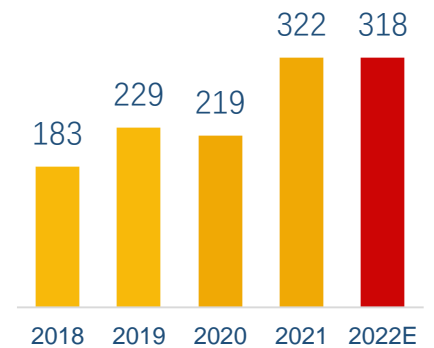
Refined copper/1,000 tonnes




Refined gold/1mn ounces



Refined zinc and lead/1,000 tonnes



II. ESG and Climate Action

A group of men, likely a football team, are gathered around a large, ornate golden trophy. They are wearing yellow and red sports jerseys. Some are holding water bottles. The scene is outdoors, and the atmosphere appears celebratory.

Champion football team at Carrilu cement plant in the DRC



- An ESG system spearheaded by the Board of Directors, one that is in line with international standards
- Through active steps to fulfil our social responsibilities, Zijin's mission of Mining for a Better Society has been well-recognized across our host jurisdictions
- Approach to community relations: Forging a shared future
 - Emphasizing the need to facilitate social and economic development at host communities
 - Considering the needs of all stakeholders
 - Fulfilling obligations in community development, employment, tax payments and charitable causes
 - Local sourcing
 - Carrying out community development programs and increasing investments to improve local education, people's wellbeing, industries and infrastructure

A community member in Buriticá, Colombia plants coffee

Climate action - Clean Energy for Low-carbon Transition



Strategy	Goal	Steps
<ul style="list-style-type: none"> The ESG Committee under the Board A strategy to promote the use of clean energy to drive the low-carbon transition 	<ul style="list-style-type: none"> <i>Climate Change Action Plan</i> announced recently To peak our emissions by 2029; to achieve carbon neutrality by 2050 	<ul style="list-style-type: none"> Increasing investments and R&D in renewable energy and advanced materials Reducing the use of fossil fuels in mines and plants and promoting the use of renewable energy

	Technological improvements	Using bio-hydrometallurgy and other energy-efficient production processes Re-using waste heat, residual gas and pressure
	Energy mix	Replacing oil with electricity to reduce the proportion of fossil energy used Investing in research on ammonia-to-hydrogen conversion
	Carbon capture	Restoration of abandoned mine sites and landscape engineering of producing mines to increase natural carbon sinks
Copper, lithium and advanced materials	Producing minerals such as copper and lithium for low-carbon industries	

≥30%

30% + of energy used to come from renewable sources **by 2030**

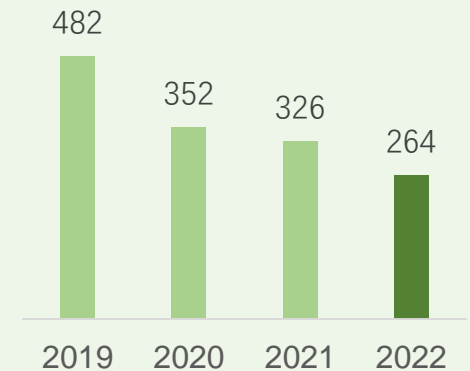
↓ 20%

Carbon intensity per unit of GDP to drop by 20% **by 2025**

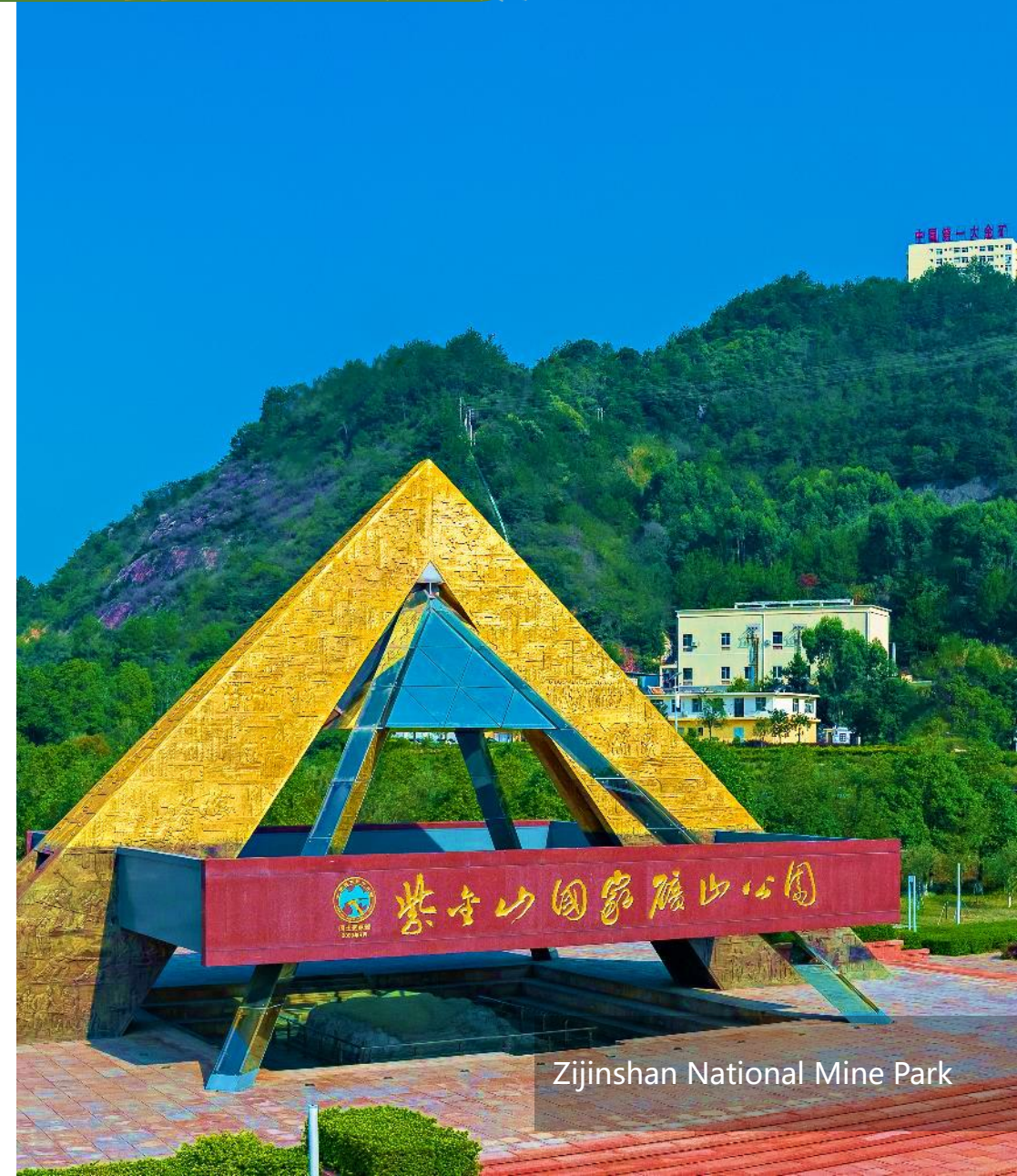
↓ 38%

Carbon intensity per unit of GDP to drop by 38% **by 2030**

Energy consumption/unit of GDP (MWH/mn RMB)

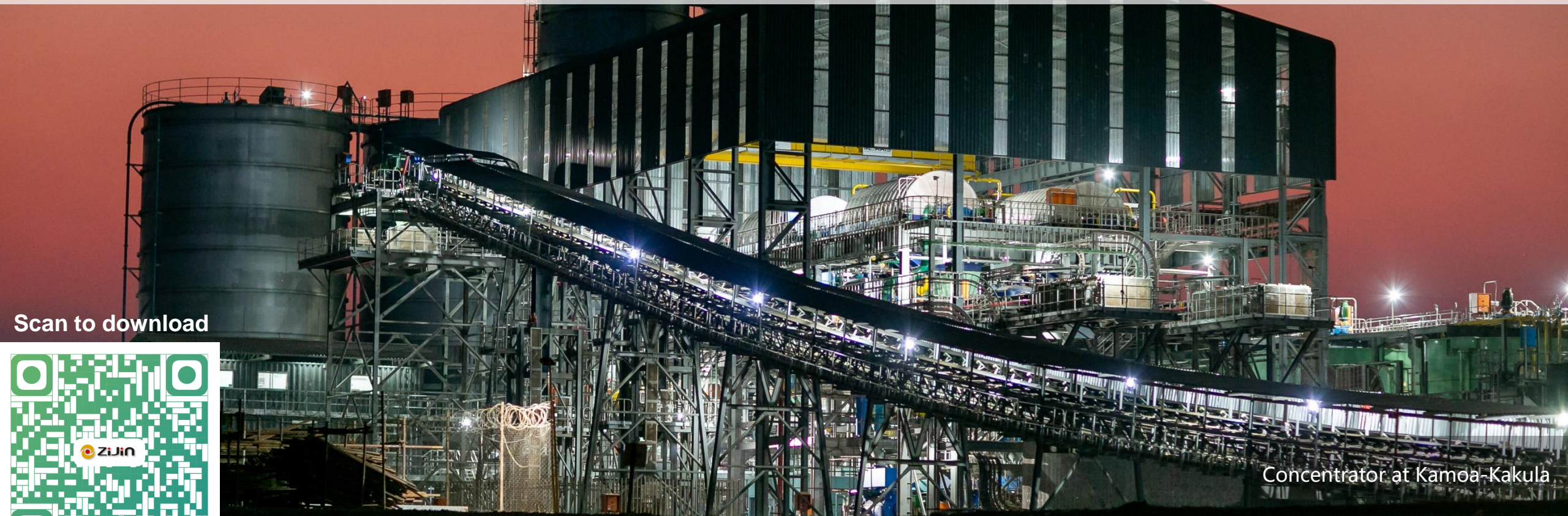


- Zero emissions and mine site restoration to high standards
- Environmental restoration starts from mining building, not after mine closure
- In China, Zijin has:
 - ✓ 13 National Green Mines
 - ✓ 5 National Green Plants
 - ✓ 1 National Mine Park
 - ✓ 19 affiliated companies certified by the ISO 14001 Environmental Management System
- Internationally, Zijin builds and operates garden-like, eco-friendly mines to high standards
 - ✓ Kolwezi Copper-Cobalt Mine, the first green mine in the DRC
 - ✓ Čukaru Peki Copper-Gold Mine, the first green mine in Serbia
 - ✓ Buriticá Gold Mine, the first green mine in Colombia
 - ✓ Zijinshan Copper-Gold Mine in China is being built as a demonstration mine for carbon neutrality



Zijinshan National Mine Park

III. Zijin's Operations in Africa

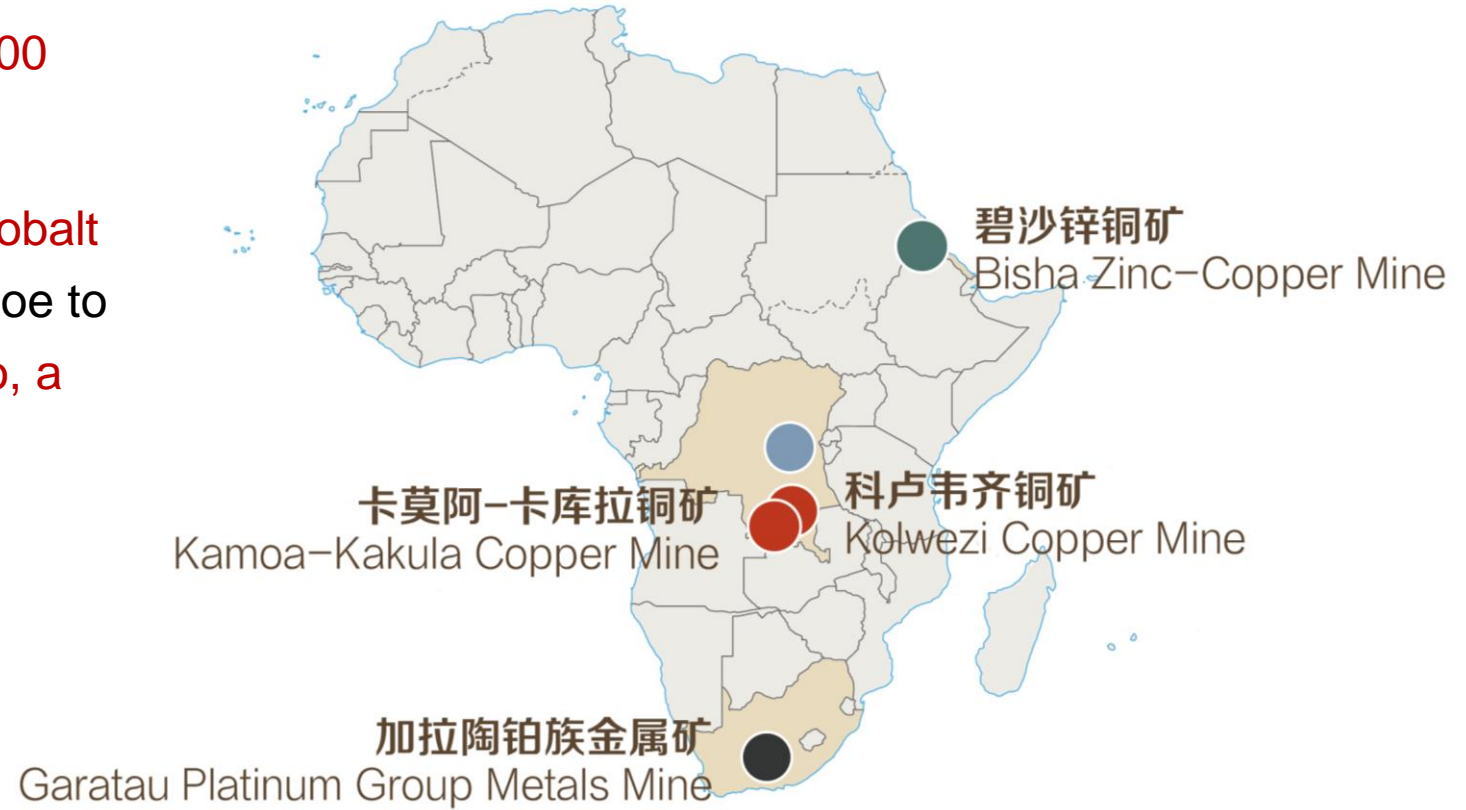


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Concentrator at Kamoa-Kakula

- Zijin: 10+ years of presence and about 9,000 employees in Africa
- DRC: Operator of the **COMMUS copper-cobalt project** in Kolwezi; joint venture with Ivanhoe to develop **Kamoa-Kakula**; stakes in **Manono**, a world-class hard-rock lithium mine
- Eritrea: Operator of the **Bisha zinc-copper mine**, the country's largest mine
- South Africa: developing the **NKWE PGM project**
- Combined production in Africa in 2022: 250,000 tonnes of copper, 110,000 tonnes of zinc



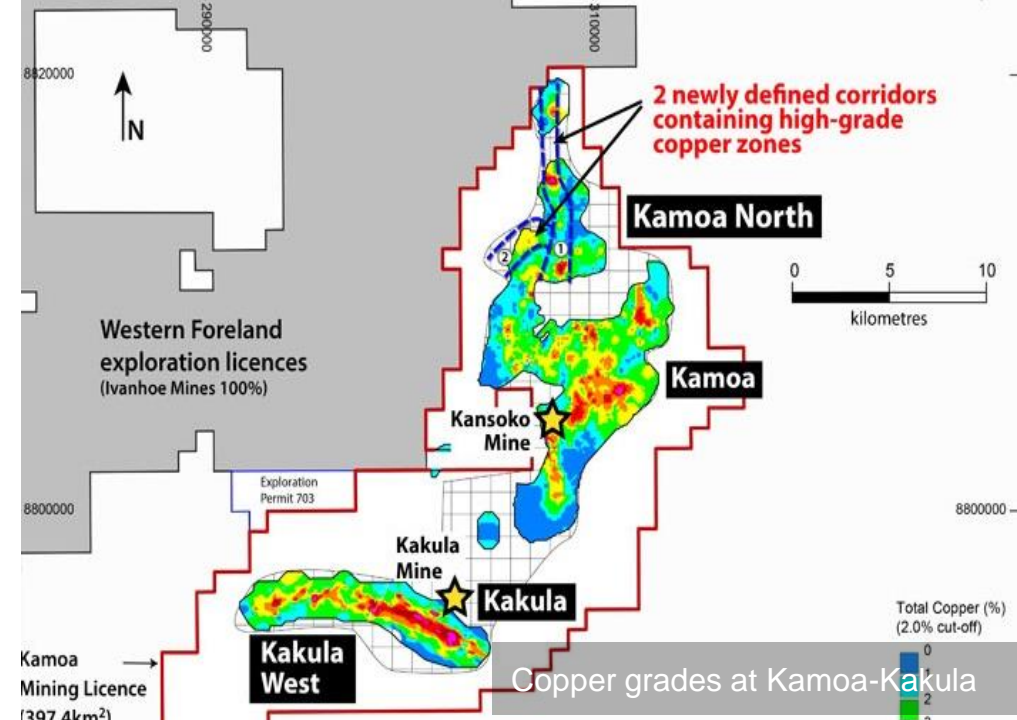
Major Projects in Africa - Kamoa-Kakula Copper Mine in the DRC



- Largest shareholder of Kamoa-Kakula, with a 45% interest in the project (inclusive of the interest held via stakes in Ivanhoe Mines)
- Copper resources: 43.69Mt@2.53%
- ✓ Phase I concentrator commissioned in May 2021, and Phase II concentrator in March 2022. The ongoing one-year debottlenecking program will boost copper production to over 450Ktpa, positioning it to be the world's No.4 copper mine
- ✓ Phase III expansion and 500Ktpa smelter project are being built and scheduled for commissioning by the end of 2024
- ✓ To become the second largest copper mine in the world when its throughput reaches 19Mtpa and annual production more than 800,000 tonnes of copper
- ✓ 2022 copper production: 330,000 tonnes
2023 guidance: 390,000 to 430,000 tonnes
- Sustainable Livelihoods Program; the project is powered by clean energy
- Projected to be among the world's lowest greenhouse gas emitters per unit of metal produced, as confirmed by a 2020 independent audit performed by Hatch Ltd., of Canada



Panorama of a concentrator of Kamoa-Kakula



- Operator of the project; a 72% interest
 - ✓ Copper: 1.69Mt@2.88%, cobalt: 48,000t@0.08%
 - ✓ A success case for adopting innovative practices in Africa.
 - ✓ Phase I built in 2 years, vs. 2.5 years as planned. Phase II built in only 9 months, a Zijin speed of mine construction in Africa.
-
- 2022 production: 91,000 tonnes of mined copper, 1794 tonnes of cobalt
 - 2023 guidance: 90,000 tonnes of copper, 1717 tonnes of cobalt



Panorama of the Kolwezi copper-cobalt mine

- A 74% interest in the Garatau PGM project held through Nkwe(100% owned subsidiary)
- Located in the world-famous Bushveld Complex, northeastern South Africa, the Garatau deposit contains about **1,360 tonnes of 4E PGM metals** (platinum, palladium, rhodium and gold)
- Early works being advanced for mine building to commence at an early date. **Feasibility of project construction has been completed in one section of the mine. Engineering and construction plans are being optimized**



Panorama of NKWE's PGM mine in South Africa

IV. The development of the global mining industry and opportunities in the Chinese market

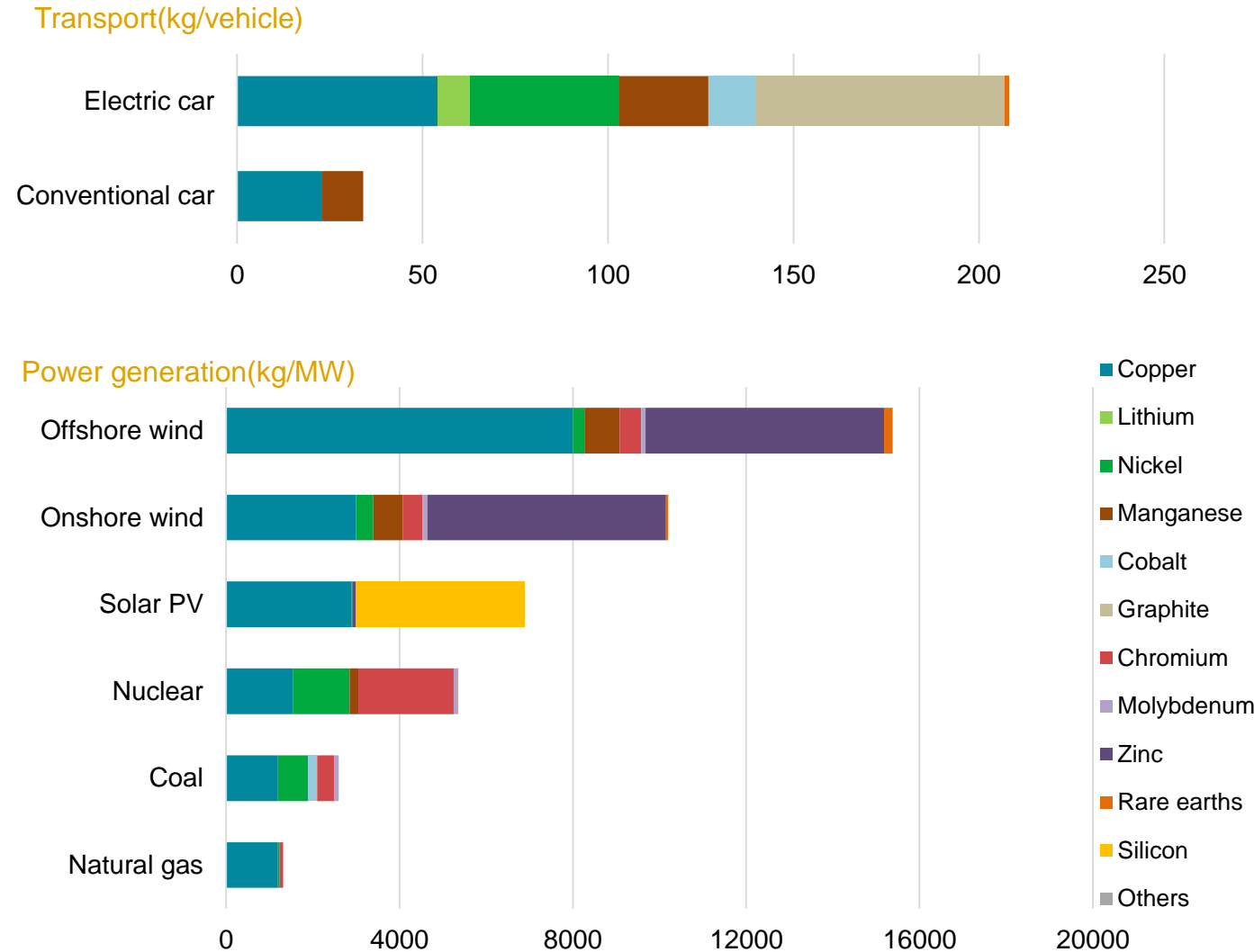
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Reservoir downstream from the Bor copper mine in Serbia

Mining provides **essential materials** for economic development. World powers are looking into ways to ensure the security of mineral supply.

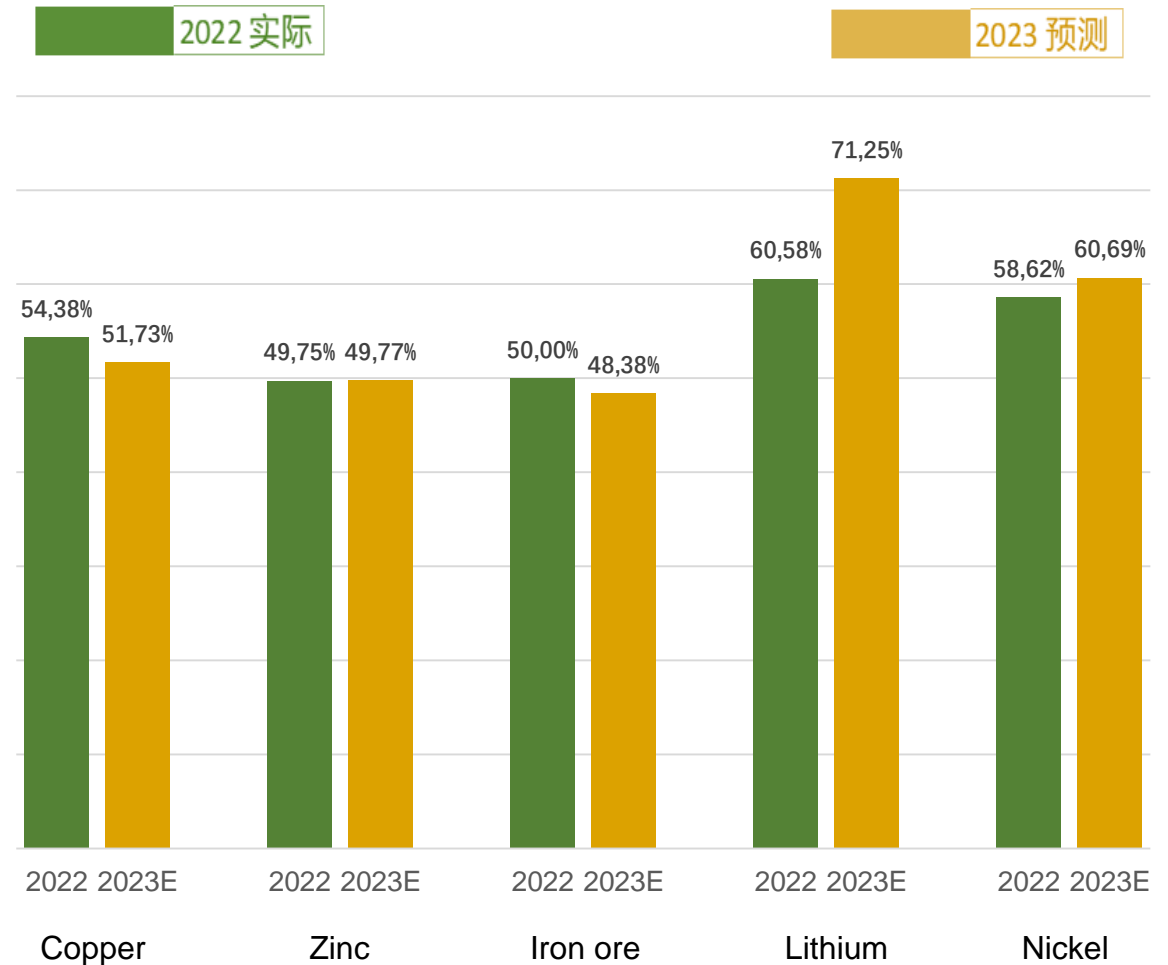
- Post-pandemic **recovery** and growth won't happen without **mineral resources**
- **Curbing global warming and reducing carbon emissions are now a global consensus**, which will create **new opportunities** for the mining industry and accelerate the **renewable energy revolution**
- The **energy transition** requires **critical minerals** such as copper, nickel, lithium, cobalt and PGMs. Africa is richly endowed with most of them.
- The widespread use of electric vehicles, and wind, solar and nuclear power will drive demand and investments for the mining industry



Source: International Energy Agency

- China consumes **50% or more** of the world's base metals such as copper, iron ore, nickel and zinc. It is highly reliant on mineral imports, and is **a massive market** for the global mining sector.
- Global EV sales in 2022: 10+ mn; **China's share: 40%**
- Global installed EV batteries in 2022: 450 GWh; **China's share: 60%**
- **Chinese demand** for battery metals such as lithium, nickel, and cobalt will **remain strong** in the foreseeable future, which will **boost the growth of the global mining industry**

China's share of global metals consumption



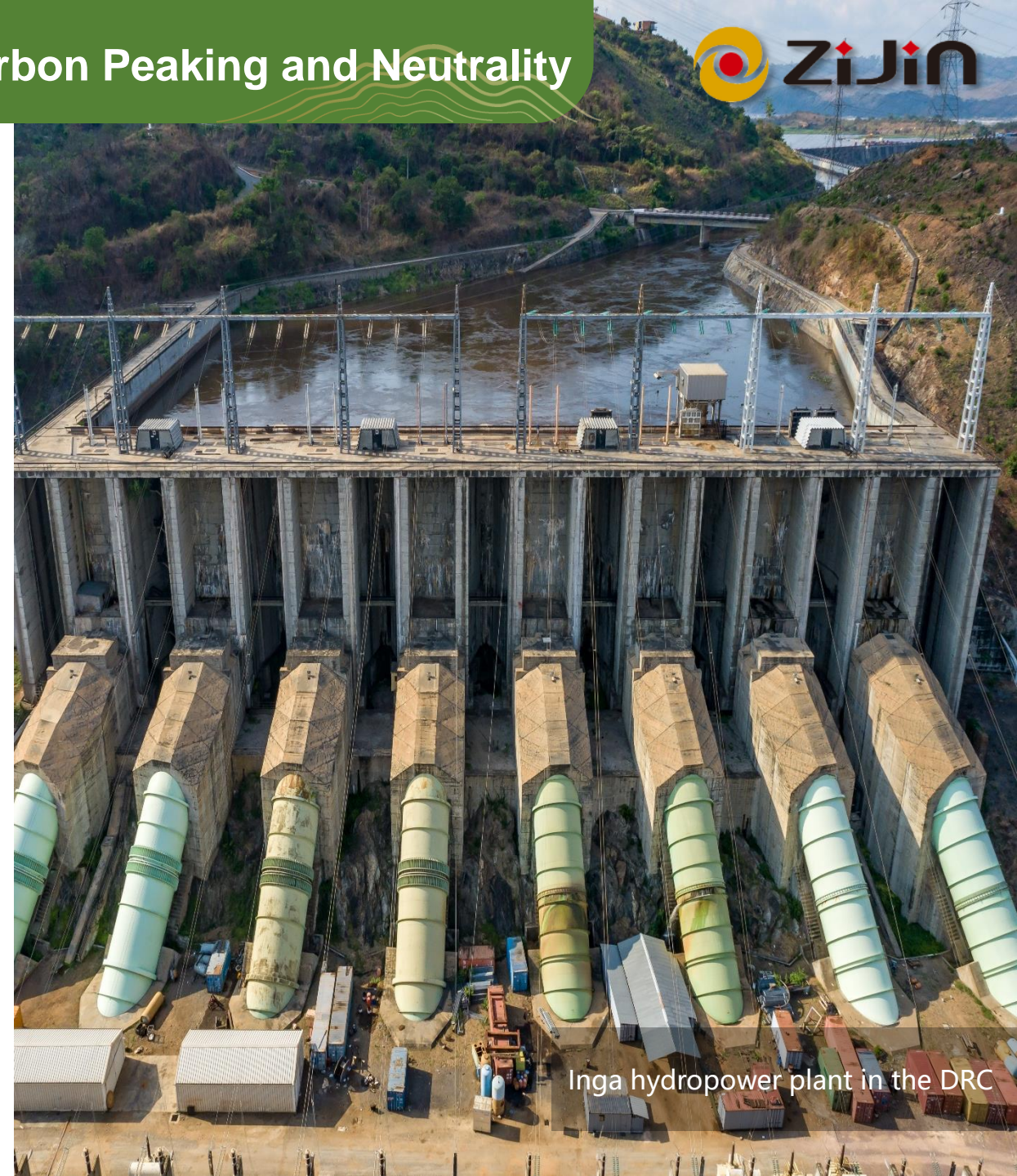
V. Zijin's strategy in the renewable energy era

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Brine evaporation at the 3Q lithium project in Argentina

- Controlling GHG emissions and curbing global warming: a global consensus.
- A far-reaching **energy revolution**: the switch from fossil fuels to clean, renewable sources of energy.
- Zijin
 - Making more investments in battery metals like **copper and lithium**, to become the world's important supplier of battery metals
 - Entered the renewable energy industry, building solar, wind and hydro power stations in managed mines; working to **increase the proportion of renewable energy consumption** and use clean energy where possible
 - **Driving electrification at mines** through the development of intelligent mines
 - **Eco-friendly mining**: protecting the environment and ecosystems; developing natural carbon sinks
 - Recently released the **Climate Change Action Plan**, setting out clear requirements and timetables

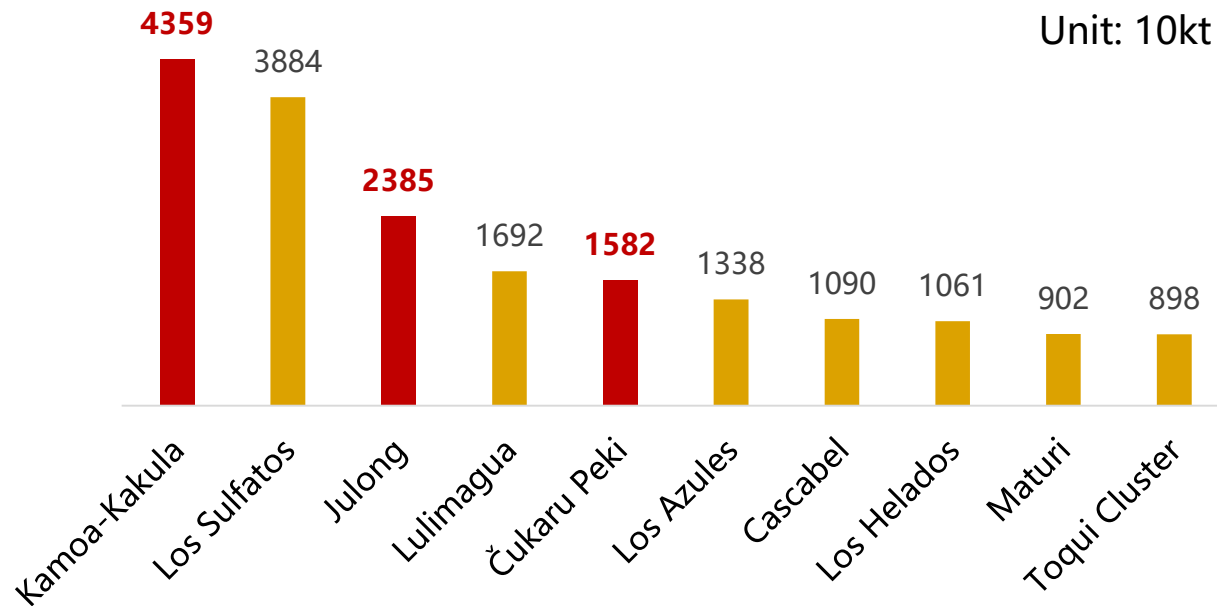


Inga hydropower plant in the DRC

Leapfrog Growth in the Copper Segment



- Zijin owns significant stakes in 3 of the top 5 copper mines discovered in the 21st century.



- All three are producing assets. Combined copper output in 2022: 560kt. They are undergoing debottlenecking and expansion.



Asia's largest SAG mill owned by Julong Copper

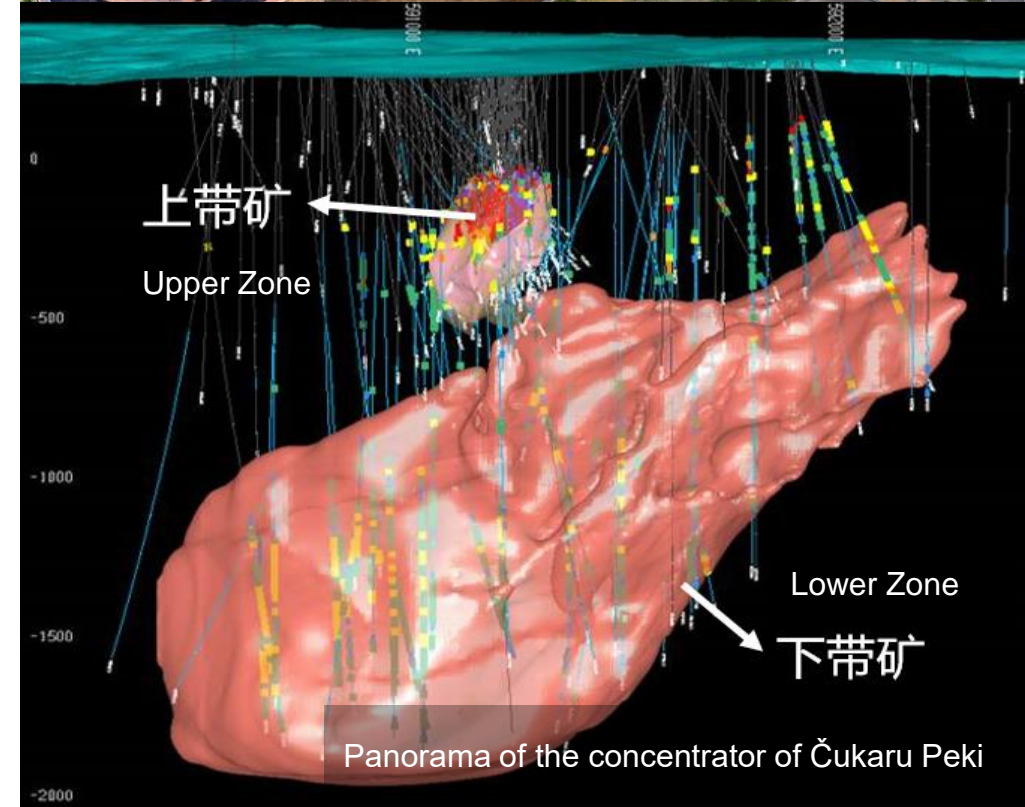
Core asset - The World-Class Čukaru Peki Copper-Gold Mine in Serbia



- 100% interest
- Upper zone:
 - ✓ Copper: 1.54Mt@2.45%; Gold: 86t@1.37g/t
 - ✓ At 8% cut-off, 2.95Mt of ultra-high-grade ore, 360kt of copper @12.3%; 25 tonnes of associated gold @ 8.67g/t;
 - ✓ Began commercial production in October 2021. Average annual output after reaching name-plate capacity: 91Kt of copper and 2.5 tonnes of gold. Estimated peak annual output: 135Kt of copper and 6 tonnes of gold
- Lower Zone:
 - ✓ Copper 14.28Mt@0.83%; gold 295 tonnes@0.17 g/t
 - ✓ Block caving to be used; peak annual output: 300Kt of copper
- 2022 output: 105Kt of mined copper and 4.9 tonnes of gold
- 2023 guidance: 120Kt of copper and 5.1 tonnes of gold



Panorama of the concentrator of Čukaru Peki

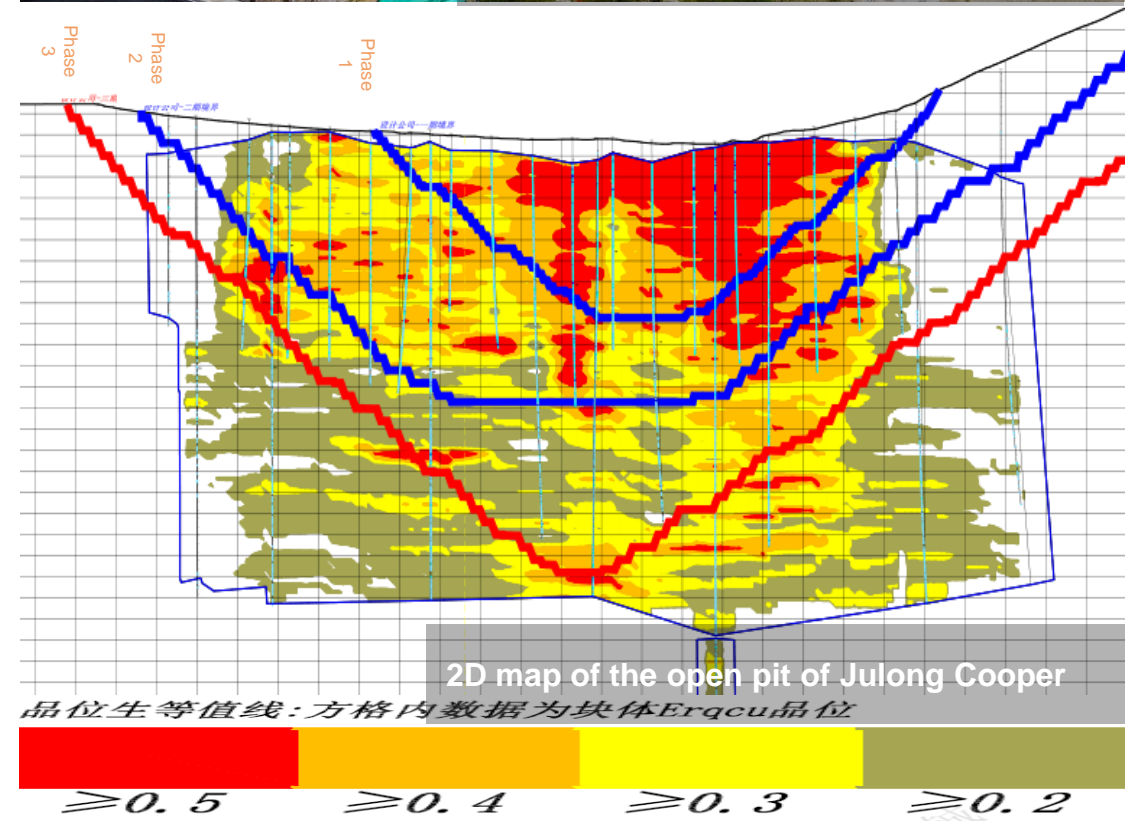


Panorama of the concentrator of Čukaru Peki

Core asset - Julong, the Largest Porphyry Copper Mine in China



- 50.10% interest
- 7.6 bn tonnes of ore: Copper metal, 23.85Mt@0.31%, molybdenum, 1.58Mt@0.021%, silver, 19Kt @2.51g/t
- ✓ Phase 1: 150,000 t/d, commissioned at the end of 2021;
- ✓ Phase 2: 200,000 t/d, under construction, scheduled for commissioning at the end of 2024;
- ✓ Phase 3: 300,000 t/d, expected to be commissioned in 2027;
- ✓ Combined throughput: 200 Mtpa; to be the largest copper mine in the world with an annual production of about 600,000 tonnes
- 2022 output: 115Kt of mined copper; 2023 guidance: 150Kt of copper



- After the acquisition of “two salars and one mine” in H1 2022, Zijin controls over 12 Mt of LCE resources
- Aims to put the first phases of the three projects into production by the end of 2023, and strives to become a major global lithium supplier by 2025

Salar: 3Q in Argentina



- Among the world's major salars, 3Q ranks No.9 by resources and No.4 by grade, with an LCE resource of 7.63 million tonnes.
- In June 2022, the 3Q project commenced trial brine evaporation. Phase 1 is designed to produce 20kt of battery-grade lithium carbonate, which is expected to come on stream in 2023. The production capacity for Phase 2 is planned at 40-60 Ktpa.

Salar: Lakkor Tso in China



- Lakkor Tso ranks among the world's top 20 salars with an LCE resource of 2.14 million tonnes.
- Phase 1 is designed to produce 20,000 tonnes of lithium carbonate per annum; Phase 1 and Phase 2 combined: estimated at 50Ktpa.

Hard-rock Lithium Mine: Xiangyuan in Hunan, China



- 874,000 tonnes of lithium oxide, and 2.16 million tonnes of LCE, with great potential for reserve increase.
- Open-pit mining, with a 10Mtpa designed throughput. To produce lepidolite containing 60,000 to 70,000 tonnes of LCE per annum, with associated rubidium, cesium, tin, and tungsten being recoverable

- **Mission: Mining for a better society**
 - **Goal: Supplying low-carbon materials for a better future of humanity**
 - **Vision: To be an important global producer of green minerals, and win the respect and recognition of the international community**
-
- ✓ Committed to supplying low-carbon materials for a better future of humanity and helping to achieving carbon neutrality through a modern mining model that is green, efficient and sustainable
 - ✓ Achieving growth and creating wealth while making continued contributions to host countries, communities, and other stakeholders
 - ✓ Learning from the good practices of international peers, improve our performance against key metrics to approach the levels of established leading miners, and to be a respected global company



Harvest at Kamo-Kakula

- Africa is a vast continent rich in mineral resources. We are very optimistic about the future of Africa and will increase our investments here
- As a responsible global mining company that is still relatively new to the industry compared with a lot of our peers, we are making progress on daily basis in terms of improvements in ESG performance and human resources with international competence
- Looking forward to more exchanges and cooperation with global peers, to share in the massive opportunities in the Chinese market
- Due to the unbalanced distribution of natural resources, it is a reality that natural resources are allocated on a global scale, which brings benefits. Therefore, the globalization of the mining industry is as important as economic globalization. Let's work together to keep the momentum for international cooperation, to maximize the benefits for all stakeholders



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Mining for A Better Society

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The Tingjiang river flowing past the Zijinshan mine