The Big Read Natural resources

How China is winning the race for Africa's lithium

The country already dominates processing of the metal for use in electric vehicle batteries and is now investing heavily in mines, leaving western operators scrambling to keep up

Harry Dempsey in London and **Joseph Cotterill** in Uis 46 MINUTES AGO

The settlement of Uis in a remote part of Namibia seems an unlikely hotspot for a mineral cold war over the future of electric vehicles.

Uis lies in the arid hills of Erongo, a large and sparsely populated province of the west African country. For decades the only signs of its mineral wealth were the gemstones sold to tourists by artisanal miners, who scrabbled a living in the shadow of a disused tin mine.

But soon the site of that mine will be part of a global race for lithium, the alkali metal that is a key raw material for automotive batteries. Securing reliable lithium supply is one of the biggest challenges facing carmakers striving to produce more electric vehicles.

A pilot plant being built by Andrada, a London-listed miner, should produce its first batch of concentrated lithium by the end of June, using ore mined from the resurrected and expanded tin operation.

The facility will conveniently lie less than 300km from Walvis Bay, a major regional port. Anthony Viljoen, Andrada's chief executive, believes the region will be "globally significant" not just for lithium but other metals critical to the energy transition, such as tin and tantalum.

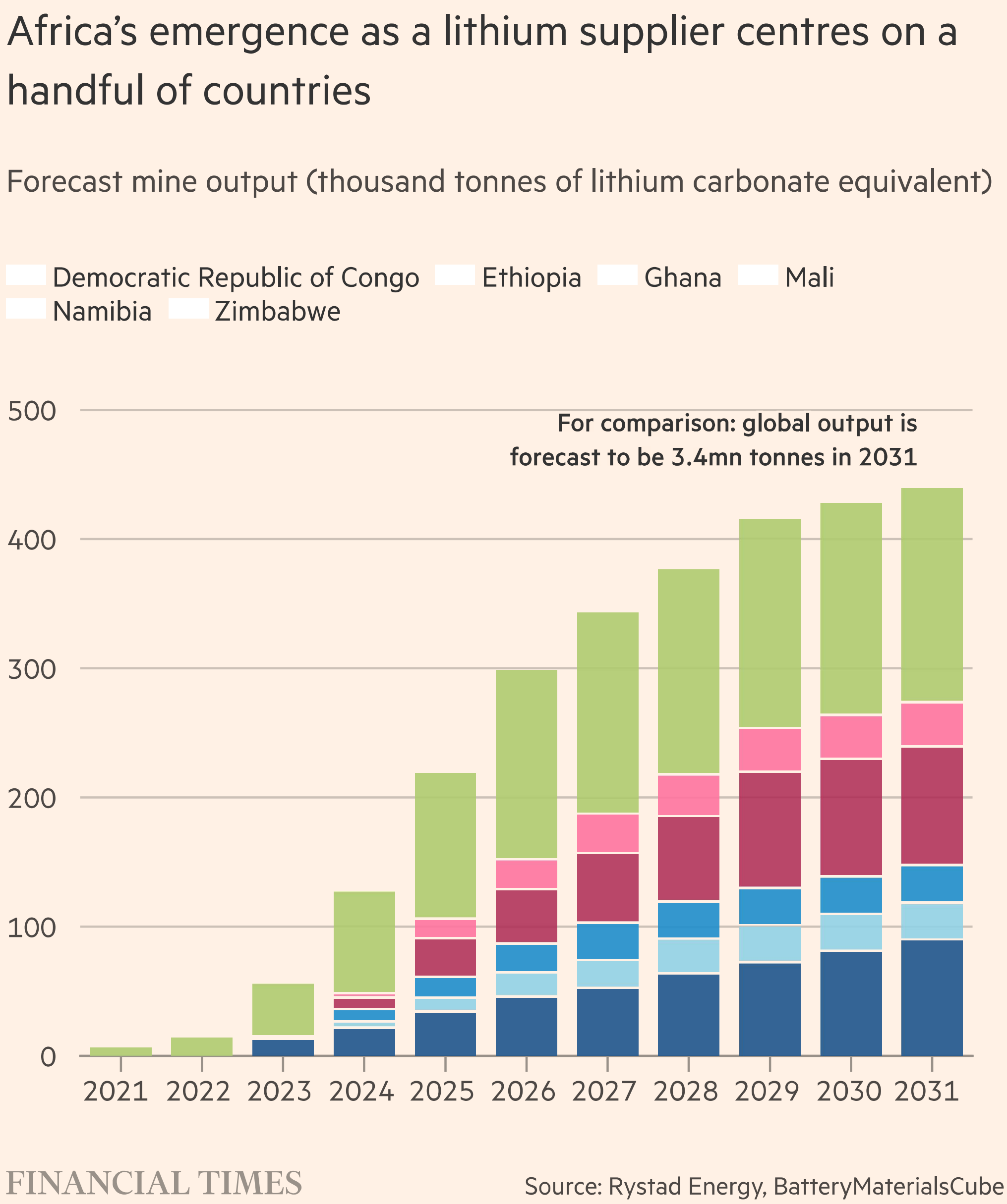
But it has competition. Last month, Africa’s first Chinese-owned lithium concentrate plant started up trial production at Arcadia, in Zimbabwe. That mine was bought by Huayou Cobalt in 2021 for $422mn, part of a recent billion-dollar wave of Chinese lithium deals in a country where many western investors fear to tread.

“The first wave of Chinese investments has taken place and that has led to a rude awakening for western companies,” Viljoen tells the Financial Times after a tour of the site of Andrada’s plant.

More than just lithium is at stake. From Brussels to London to Washington, concern over access to critical minerals is at an all-time high after Russia’s invasion of Ukraine and amid escalating tensions between the west and China. The People’s Republic has built a dominant position in many of the minerals that are crucial for the energy transition, including cobalt, lithium and rare earth metals. The west is preparing to spend hundreds of billions of dollars to try to catch up.

One recent visitor to Uis was Thierry Breton, the EU internal markets commissioner in charge of the bloc’s strategy for ensuring supplies of critical minerals. He praised the mine as “one of the potential largest lithium hardrock mine[s] in the world” on Twitter. Amos Hochstein, Joe Biden’s energy security envoy, has also been touring Africa and says the US plans to start enacting a strategy to invest in the continent’s minerals.

“We have to have the mining in the hands of multiple countries, companies, and there needs to be competition,” he says.



But across the continent, it is clear who has already stolen a march. "It's not so much fear of the Chinese getting there first. They are there first. It's already happened," says Russell Fryer, executive director of Critical Metals, a London-listed investor in African mines.

After Zimbabwe, Namibia is the next country in Chinese investors' sights. Last month Huayou Cobalt also gained a foothold in Erongo with a small but symbolic investment in Askari, an Australian firm exploring in Uis. Xinfeng, a Chinese exploration company active in Erongo, has mined tens of thousands of tonnes of raw lithium ore and shipped it to China.

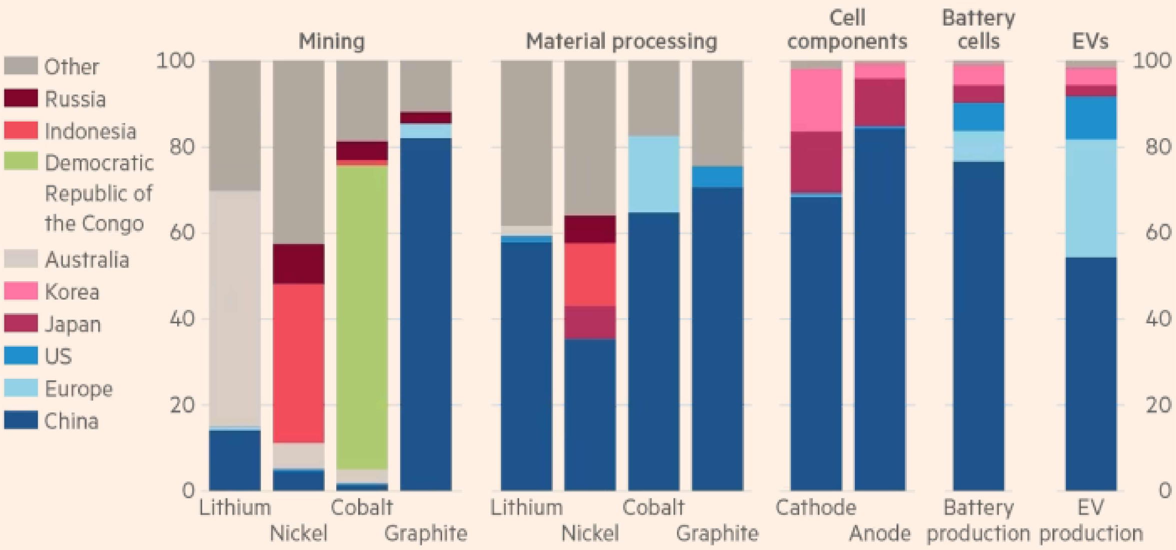
The battery boom

Known as "white gold", lithium is the lightest solid element in the periodic table. Its high electrochemical potential makes it critical to electric vehicle batteries. It is produced from the brines of Latin America or hard-rock ore bodies in Australia — the leading producer — and other parts of the world, including Africa and China itself.

Lithium is abundant across the Earth, meaning that there should be enough to go around if money is pumped into the right projects. The challenge is timing: the rapid uptake of electric vehicles is expected to drive a near fivefold increase in lithium demand by 2030.

China dominates the downstream electric vehicle battery supply chain

Geographical distribution* of the global EV battery supply chain, 2022 (%)



* Refers to the country where the production occurs
Percentages for mining and EV output based on actual production. All other percentages are based on production capacity
Source: IEA
© FT

The EU and a growing number of US states such as California and New York want to stop selling petrol and diesel cars by 2035, a deadline that leaves little lead time to discover good lithium deposits and develop them to consistent production. Fearful of deeper shortages later this decade, carmakers such as General Motors have even invested in mines.

If Africa can rapidly bring lithium projects online this decade, it will go a long way to fixing a bottleneck in the energy transition. Commodity trading giant Trafigura predicts Africa could supply a fifth of the world's lithium in 2030 while Susan Zou, an analyst at Rystad Energy, says the continent "could be a rising star for lithium minerals".

"If you look at the development of mines in Africa, they are quick." In particular, she says, Huayou Cobalt's development of Arcadia in Zimbabwe was "outside of people's expectations".

An old open-cast tin mining pit in Uis, Namibia, part of the portfolio of the London-listed Andrada. The miner is having to show it can achieve high tin throughput before it moves on to lithium © Joseph Cotterill/FT

One person familiar with that project says equipment was ordered before the deal was even signed and construction was nonstop, adding that Chinese financiers are far more likely to take big risks than western development and commercial banks.

Junior African miners face an uphill battle in capital markets. Andrada's market capitalisation is less than £100mn and it is having to concentrate on demonstrating that it can achieve high tin throughput and keep costs down before it moves on to lithium.

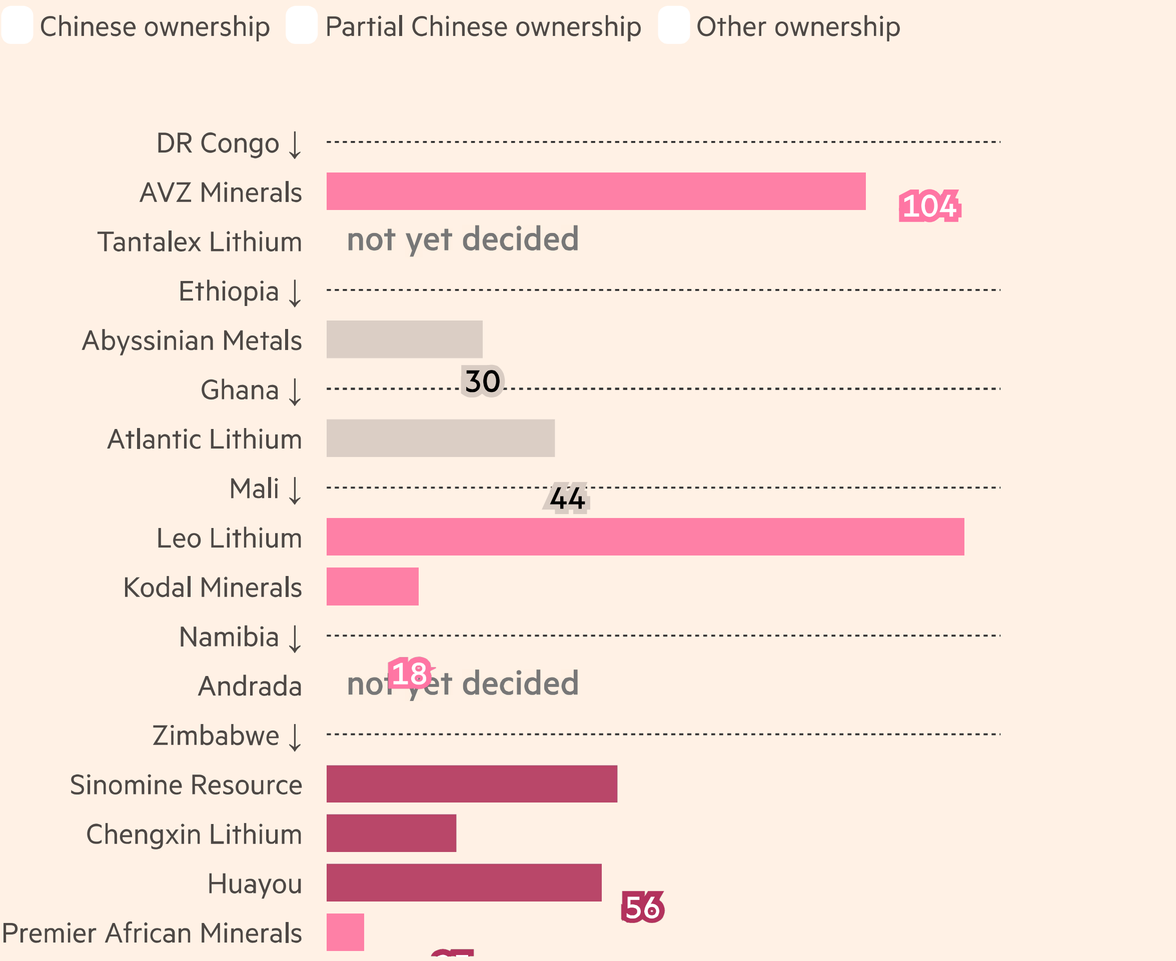
While US and European officials have been promoting African partnerships and compiling lists of critical minerals, Chinese investors have been not only buying up African mines to produce these minerals but building refineries at home to process their output.

China is way out in front when it comes to converting the metal to raw materials for batteries; the International Energy Agency puts its share of global refining capacity at 58 per cent. Until similar facilities are operational in Europe, the US, or Africa itself, China will be the main customer for Africa's lithium.

“It’s apparent [that] Africa is closer to Europe and shipping the product to somewhere in Europe would make economic sense, but China has already put a lot of infrastructure in place,” says Bernard Aylward, chief executive of Kodal Minerals, a London-listed lithium developer active in Mali, which this year received more than $110mn in funding from Fosun subsidiary Hainan Mining.

Chinese groups are behind most of Africa’s lithium mining projects

Initial lithium carbonate equivalent capacity ('000 tonnes), projects* listed by country



FINANCIAL TIMES Source: Fastmarkets, FT research • *small and very early-stage projects not included

Chinese companies invested in lithium supply in Africa and Latin America even when lithium prices were low. As Australia builds domestic processing plants for its own mineral riches and after the Canadian government ordered Chinese investors to divest from certain Canadian mining companies, China is doubling down on those developing regions.

"We have to be fair to the Chinese," says Hadley Natus, chair of Tantalex, a group exploring for lithium in the Democratic Republic of the Congo. "They put money in long before anyone else did."

The charm offensive

Faced with China's dominance of the lithium supply chain, western officials are pitching their investment offer to African countries as a more socially responsible alternative. African counterparties "see us as a fair arbiter, as someone that can help with greater transparency," says Nusrat Ghani, the UK minister responsible for critical minerals.

But that only goes so far when confronted with challenges on the ground, which range from lack of transport infrastructure to corruption and capricious politics. At Manono in the DRC, an old tin mining area like Uis that could be Africa's biggest untapped lithium deposit, Australia's AVZ Minerals is locked in a legal battle with China's state-backed Zijin Mining over the ownership structure of the concession. Its shares have been suspended since last May as a result.

Marius Mihigo, a Congolese businessman who acts as a middleman for AVZ in Africa, says that Zijin was behind an "orchestrated misinformation campaign" against the Australian firm, after a proposal to pay him a $5mn success bonus if it secured an exploitation licence was leaked to the media.

Speaking from a hotel in London, Mihigo says he only accepted $1mn as an upfront payment and the success fee was scrapped in the final contract. Zijin rejects his claims, calling them "biased and misleading".

A digger at work on the road at Arcadia's mine in Zimbabwe last year. The landlocked country's lithium would need to cross a border to even begin to access the global market © Tafadzwa Ufumeli/Getty Images

In March, Atlantic Lithium, the London-listed developer of a Ghanaian mine to supply the US, was accused by a short seller of bribing government officials to secure licences. It denies the claims, which it says are "false and misleading".

Zimbabwe's lithium boom also comes with the unpredictable politics of the Zanu-PF government. In December, the country banned exports of raw lithium ore to stifle informal mining and favour local processing, but the decision could increase project costs.

Even if it ends up partly processed at home, landlocked Zimbabwe's lithium would still need to cross a border to get to the global market. Many other African lithium projects are far from ports; Andrada's mine is a rare exception but Uis still lacks a tarred road.

Lithium metal from Manono will require a 630km road just to get to the Zambian border, where queues as long as 70 kilometres have held up trucks laden with copper and cobalt. An upgrade to the route has been mired in a dispute between the government and a Chinese contractor.

"Governments need to start working on cross-country logistics and infrastructure if we really want to open up Africa," Tantalex's Natus says. But it is slow going. US presidential adviser Hochstein cited working for 12 months to secure western operators for the Lobito Corridor, one section of a railway that stretches across the continent from Angola's Atlantic coastline through DRC's mineral-rich Katanga region and the Zambian copper belt to Dar es Salaam in Tanzania.

Conveyor belts move ore at Andrada's Uis tin mining operation in Namibia. The miner's tin investment has brought jobs to the area, along with cash in the ATMs and dairy products in the shops © Joseph Cotterill/FT

"We're using critical minerals to incentivise the financing of the rail and port," Hochstein says. "Once you do that, you can extend that rail to build agribusiness and other kinds of business that wouldn't go into these countries if there wasn't a way to get equipment in and out."

African governments would always prefer value to be added to their country's mineral wealth at home, rather than exported abroad for others to get the benefit. Tom Alweendo, Namibia's mining minister, has said his country may follow Zimbabwe in banning exports of raw ore.

But a full-scale lithium hydroxide plant needs power, chemicals and raw lithium for processing. For now, few locations on the continent can provide all these things.

"The quicker the west comes to terms with the fact that this is a business environment, then the quicker they're going to find they have the opportunity to get a very significant foothold," says George Roach, chief executive of Premier African Minerals, a lithium developer in Zimbabwe that has committed half of its supply to China.

A race against time

Back in Uis, Andrada's tin investment has brought jobs, mobile phone reception, cash in the ATMs and dairy products in the local grocery store. Lithium mining could bring much more; the company wants to find a partner that can build a full-scale plant in Namibia to transform the metal beyond concentrate to battery-grade lithium chemicals.

"Nine months ago, it would have been clear cut — we'd sell [ore] to China. But if you're talking about a long-term strategic partner, you have various options," Viljoen says.

Colles Hoaeb, a gemstone miner in Uis, displays crystals from the area. He says western miners pay well and offer stability, whereas their Chinese rivals hire quicker to get the resources sooner © Joseph Cotterill/FT

But the history of Uis is also a reminder that mining is hard and that international politics and commodity markets are fickle. The old Uis pit closed in 1990 after Namibia gained independence from South Africa and the collapse of the international tin agreement led to prices tumbling.

Colles Hoaeb, a local gemstone miner, hopes that he is indeed living in a future African boom town. “It’s a good thing that the mine has come back,” he says. Western miners pay well and offer long-term stability, but Chinese rivals hire quicker to get the resources sooner, Hoaeb says. “They are doing small mining — take 50 guys, do the mining and finish the job very fast.”

Critical Metals’ Fryer says there is no shortage of lithium buyers but few want to run a mine. “They [the buyers] want someone else to do the hard work. They literally don’t get their hands dirty.”

There are other reasons for investors to hedge their bets. Lithium is volatile; prices for lithium hydroxide soared throughout 2022 and peaked at $80,000 a tonne in December, but have since dropped to $55,000. Although that is still almost four times the long-term average of about $15,000, the dip has led some western miners to come under pressure from investors to moderate their investment plans — even as Chinese firms push ahead.

Lithium prices fall off their recent peak but remain elevated

$ per tonne of lithium hydroxide

FINANCIAL TIMES Source: Benchmark Mineral Intelligence

Some also believe the ultimate answer to potential shortages of lithium will not be digging more of it out of the African rock, but developing substitutes such as sodium-ion batteries in laboratories.

"The amount of intellectual capital and brainpower that is looking to find substitutes to lithium-ion batteries is pretty remarkable," Fryer says.

To limit this substitution risk, some investors prefer to fund projects that can produce multiple metals, or ones with multiple uses. Copper is one such metal; it is being substituted for aluminium in some areas but it is still used in everything from electric cables to plumbing — and African copper deposits often yield valuable cobalt as a byproduct.

African miners pivoting to lithium expect it to be used in electric cars for years or even decades to come, saying that it would take time for a new battery technology to be widely adopted and for supply chains to adapt. In the meantime, they are in a race to develop new deposits not just with Chinese-owned rivals but also rivals in more established jurisdictions such as Australia and Canada.

"We've got to show as quickly as possible that we can get our product to market quicker than them," Viljoen says. "As with all gold rushes, the first gold is the best gold."
