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Africa's battery metals rush—what hope of sustainable development?

By Diana Kinch

The electric vehicles revolution has been disruptive for the metals industry, bringing challenges and benefits for miners, traders, financiers, carmakers and consumers. In the longer run it should benefit the environment. But is it good for Africa?

Africa is a source of great reserves—both tapped and untapped—of metals used for batteries for EVs. The Democratic Republic of Congo provides more than 60% of the world's cobalt supplies of which Glencore is the biggest producer. Zambia and the DRC are home to some of the world's richest copper reserves in the African Copper Belt, being exploited also by Glencore and Ivanhoe Mines among others. Copper is used in EV charging infrastructure, as well as in the EVs, and will thus be subject to high demand growth whatever changes occur in battery chemistries in future in a move to trim costs. Zimbabwe has significant reserves of lithium and, according to government sources, also has "almost all the battery minerals". Projects are being developed by local companies including Bikita Minerals and Zulu Lithium. Burundi

has what is possibly the world's richest reserves of rare earths—used to make the strong magnets used in EVs—and a major project is under development by Guernsey-based Rainbow Rare Earths.

Africa's battery mineral-rich economies are now, in the main, growing faster than many elsewhere in Africa with the exception of Ghana, which has recently been leading the region's growth and may notch up 8% growth this year. The World Bank has said it expects the DRC's economy to average 5% growth in 2017-2018, compared with 2.7% in 2016, thanks in part to stronger commodity prices and a growing services sector, although other sources have put economic growth as high as 15%, propped up by cobalt prices, which more than doubled last year. Zambia's GDP



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growth is estimated at 4.5% this year and Zimbabwe’s at between 4.5% and 6%. This has led miners to suggest that Africa is already benefiting from the battery metals boom. But the extent to which this will really bring socio-economic benefits is still unclear, particularly as steep rises in the prices of metals produced locally is also inflationary. The economy in Burundi is nonetheless expected to contract this year as its farmers face export restrictions on tea and coffee and the benefits from the new-age minerals have not yet set in. Rainbow Rare Earths’ Gakara mine now ramping up is the sole non-artisanal mine currently operating in the east African country.

Not Africa’s first minerals boom

Observers point out that this is not Africa’s first minerals boom, and if the ample iron ore, gold, platinum and palladium reserves exploited in recent decades haven’t yet sorted Africa’s economic problems, why should battery metals?

“It’s not really helping so much because most of the money is going to the corporate world”, said Stanley and Tonella Nsofwa of Hapa Development Zambia Ltd, an organization which helps miners partner with local companies in Zambia, at the recent Global Mining Finance conference in London. Admittedly, international miners, including ArcelorMittal and Ivanhoe, have taken important initiatives to protect local African populations, including their own workers, from ebola and malaria. But mining still essentially yields a single harvest, so unless important recycling initiatives are also set up in African nations, such as Eurasian Resources Group’s cobalt tailings project in the DRC, it is unlikely that the benefits will be sustainable in the longer-term.



Some African nations are taking important steps to turn the battery minerals boom to their advantage. DRC president Joseph Kabila's government is thrashing out with miners, including Glencore, Ivanhoe and China Molybdenum Corporation, the details of a new mining code expected to come into force by June. "This will increase royalties on export sales of most minerals from 3% currently to 5%," says Freddy Shamwana, a chamber of mines member and executive director of African Environmental & Sustainability Consulting. "In addition, the government plans to increase a mandatory shareholding in all mineral extraction companies from the current 5% to 10% from the time they start production: this equity stake will not be paid for by the government," he said, noting that foreign miners still need to team up with a local partner or subsidiary.

In Zimbabwe, the mining investment climate has changed for the better since former president Robert Mugabe resigned from office late last year after 37 years in power. "The indigenization law changed in

March, except for in platinum and diamonds," Donald Charumbira, Zimbabwe ambassador in London, told S&P Global Platts, noting that 100% foreign ownership is now permitted in projects in other mineral areas, as opposed to the obligatory 51% local ownership previously. "Investors are willing to take meetings now... delegations are coming from all over the world; there is tangible interest," Charumbira said.

Zambia, which aims to produce 1 million metric tons of copper this year, is, meanwhile, considered to be a tough environment for junior miners to get mining permits: they are reportedly also shying away from Tanzania which has upped its royalties and local ownership rules.

In Burundi, Rainbow Rare Earths reports that it is obliged to reinvest all its export sales revenue into the country, under an accord set up with the government in 2015. "The Company is therefore exposed to the risk that access to its funds may be restricted either as a result of currency shortages,

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governmental policy changes, or international banking restrictions imposed on Burundi by banks or governmental bodies,” said CEO Martin Eales in the company’s most recent financial statement.

In this case, the quality of the deposits to which Rainbow has rights make this kind of arrangement worthwhile. Still, for many companies, mineral investment in Africa is only attractive to shareholders if there is a guaranteed return, remembering that the lack of infrastructure, political risk and rising cash costs on the continent generally make for a lower return on investment than mining projects in safer jurisdictions. “It takes 8 or 9 years to prepare a mine to come on stream; you can have a regime change in that time,” says mining asset manager Farzad Moshfeghi of London-based Finity Asset. Which means that much of that African cobalt, lithium and copper may still be untouched underground for many years to come. ■

Cobalt Points

Cobalt is mostly a byproduct of copper and nickel mining and only about 1% of the world’s cobalt supply comes from primary cobalt mines, making new supply almost entirely dependent on new nickel and copper projects, according to the website of Cobalt 27 Corporation.

Electric vehicles will require 314,000 mt of cobalt by 2030, representing 314% of global 2016 supply, Ivan Glasenberg, CEO of Glencore, told investors in a conference call last December, quoting a study his company commissioned from CRU.

“It is clear electric vehicles will be a disruptive force to the world,” Glasenberg said. But he also said the world would not be able to rely on the DRC to provide that quantity of cobalt, meaning recycling would have to play a much bigger role than today.

The same study Glasenberg quoted from said EVs would need 4.1 million mt of copper, representing 18% of 2016 global supply for use in generation, grid infrastructure, grid storage and EV charging infrastructure.

Glencore’s Katanga Mining subsidiary in DRC is expected to produce 150,000 mt of copper cathode in 2018 and 11,000 mt of cobalt, rising to 300,000 mt of copper in 2019 and 34,000 mt of cobalt.

In March, Chinese battery recycler GEM said it had agreed to buy 42,800 mt of contained cobalt in hydroxide over 2018-2020, taking a substantial quantity of cobalt units out of the market over the next two years, which helped trigger further price increases of cobalt metal on the spot market.

China Molybdenum and EGA also have substantial mining interests in the Katanga mining district of DRC. China Molybdenum is the largest Chinese investor in the DRC cobalt space, operating in the Tenke Fungurume mining area of Katanga province.



Booming demand for smartphones was the single biggest contributor to cobalt's price increases according to some studies. In a report published last December, BMO Capital Markets said, "Smartphone batteries are still the main end use market for cobalt."

Canadian investment vehicle Cobalt 27 Capital hoarded nearly 3,000 mt of cobalt metal during the course of 2017, a stock it still holds. This also contributed to cobalt's price gains, and in December alone, Cobalt 27 added 822 mt to its holding, funding the purchase with an issue of shares.

In February, Cobalt 27 announced it had acquired a 1.75% net smelter return royalty on all future production over all metals from Royal Nickel's Dumont Nickel-Cobalt Project, one of the largest undeveloped nickel/cobalt resources in the world, located in Quebec in Canada.

In 2017, the price of physical high-grade cobalt cathode rose by nearly 138% to \$36.50/lb at the end of December from \$15.35/lb at the beginning of the year, according to S&P Global Platts assessments. In the period from the beginning of 2018 to the end of March this year, cobalt prices rose by nearly 190%. In the first three months of 2018, cobalt prices rose by 22% to \$44.50/lb, the highest spot price seen since the middle of June 2008.

Batteries—for smartphones, as well as EVs—are competing for cobalt units with a strong aerospace industry, where aircraft engine manufacturers have multi-year order backlogs. Cobalt is used in jet engines and also in industrial gas turbines. Lower grades of cobalt are also used in cutting tools and high-speed steels, where demand is on the increase because of increased mining and exploration activity. ■

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