

Zone 5 copper project on track to meet production target date

NADINE JAMES | CREAMER MEDIA REPORTER

Botswana miner Khoemacau Copper Mining (KCM), a subsidiary of private-equity firm Cupric Canyon Capital (CCC), has completed the drilling phase of its Zone 5 feasibility study, which demonstrates the viability of mining and processing 10 000 t/d of copper. Construction can start at the project, which hosts 100-million tons of high-grade copper/silver ore, with CCC reviewing funding options, including debt, equity and self-financing, as well as alternative financing. CCC COO **Robert Coyle** expects to reach financial close and secure funding by June.

Located in the Kalahari copperbelt, within the Ghantsi and Ngamiland districts of Botswana, Zone 5's favourable geology and metallurgy, combined with CCC's July 2015 acquisition of Discovery Copper Botswana's (DCB's) fully functional Boseto mill, in Ngamiland, have Coyle predicting first production in the first half of 2018.

He explains that, as drilling progressed and the size of the Zone 5 resource increased, KCM realised that it could support a mining/milling operation



EXTREME MAKEOVER
Construction for the Boseto Mill's upgrades will start in 2017

that was much larger than the 10 000 t/d initially contemplated. Coyle notes that Zone 5, acquired with defunct miner Hana Mining in 2013, will average 50 000 t/y of copper from the 10 000 t/d plant and C1 cash costs will be in the lowest quartile. CCC estimates that the project's initial capital cost is about \$350-million, which includes the development of the Zone 5 mine, infrastructure improvements and the Boseto plant upgrades. Coyle believes that construction of the Zone 5 mine should start in the second half of 2016, after financing is arranged. This will include the establishment of underground mines and surface facilities.

Boseto Upgrade

The Boseto concentrator's capacity will be upgraded from its

current three-million tons a year to 3.65-million tons a year to treat Zone 5 ore. This upgrade will begin with detailed engineering in 2016, followed by construction in early 2017. The primary contractor has yet to be named, as KCM will solicit competitive bids only later this year.

Coyle says the Boseto mill is a well-designed and constructed processing facility, and can process Zone 5 ore without significant modification, as the plant performed well when treating pure sulphide ore previously.

However, based on the lessons learned from DCB's experience in operating the mill – as well as KCM's expertise in milling – Coyle explains that upgrades to the plant will likely include a new filtration plant to adequately dry

the concentrate being produced.

"Additional grinding capacity, coupled with modifications to the flotation circuit, will also be required to enhance recovery of the higher-grade ore from Zone 5," he adds, noting that several minor repairs are also needed, including the refurbishment of the primary crusher foundation.

Expansion Project and Other Developments

The Zone 5 expansion project, an extension of the Zone 5 'starter project', targets the mining and processing of 16 000 t/d of ore to produce 80 000 t/y of copper. Prefeasibility work indicates that the Zone 5 mine can produce ore exceeding six-million tons a year through mine expansion with additional declines.

Coyle points out that the Zone 5 expansion project will begin in late 2018, after production has started.

He notes that, "interestingly", the expansion project prefeasibility study demonstrates the benefits of constructing a new processing plant at Zone 5 with a capacity of 16 800 t/d, which will enable the Boseto plant to process ore from sources closer by.

"The scoping study work on this option indicates that copper production from the district could increase to over 100 000 t/y. Feed for the Boseto plant will come from previously identified resources on DCB ground – Mango, Zeta Underground and Zeta Northeast – and potentially from a new discovery by KCM geologists," Coyle states, adding that KCM is drilling these resources while evaluating the other exploration licences that are part of the acquisition of DCB's assets.

The evaluation work involves

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Renewed interest in coal could expand Botswana's mining revenue

NADINE JAMES | CREAMER MEDIA REPORTER

The Botswanan government is expected to dedicate more resources to the development of its coal sector to diversify its mining revenue and meet its energy imperatives, says mining consultancy Core Consultants MD **Lara Smith**.

This is attributed to a decreased global demand for diamonds – Botswana's main export – as well as the long-awaited implementation of the Ministry of Minerals, Energy and Water Resources' (MMEWR's) Coal Roadmap – a national strategy for the beneficial exploitation of Botswana's coal reserves – developed in 2012.

The roadmap provides for the development of coal-generated energy projects that will boost Botswana's energy capacity, such as coal-fired power stations, coal-bed

methane gas-fired power stations and coal-to-liquids (CTL) projects.

Smith notes that there is a concern that the economy relies too heavily on diamond mining, subsequently prompting the diversification of and support for other investment projects, adding that "coal mining has long been identified as a potential revenue source for Botswana".

She cites a \$4.2-billion CTL cogeneration and fertiliser project, owned and funded by energy company Coal Petroleum and South African holding company Kumvest.

The Francistown-based project is expected to use about 4.3-million tons of coal a year, sourced from Botswana's Morupule mine. The project has been in development since April 2014.



Picture by Senior Chief Photographer Duane Davis

UNTAPPED POTENTIAL

Botswana has the second-largest coal reserves in Africa, but only one operational coal mine, the Morupule mine, in eastern Botswana

It is forecast to stimulate investment and is strongly aligned with the Botswanan National Imperatives of energy security and independence of supply, combined with conscious beneficiation of local coal resources.

It is predicted that 20 000 bbl/d will be produced initially, with capacity scaling up

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• From page 30 geological mapping and sampling, exploration drilling on the Zeta Northeast and Zeta Underground areas in the vicinity of the Boseto mill, as well as drilling on the Mango Northeast zone prospecting area. KCM plans to conduct drilling on other areas of the DCB licence areas it acquired along with the mill.

Additionally, KCM continues to drill in the new Zone 5 North target, believed to be the northern limb of the Zone 5 anticline, 5 km north of Zone 5. "No resource has yet been defined, but early drilling is promising, showing high-grade intercepts over mineable widths with a significant strike length," says Coyle, stressing that "exploring this prospect is one of our highest priorities for the 2016 drilling programme".

He emphasises that, while commodity prices are always a concern to producers, the price of copper is cyclical and the period of low commodity prices will end



Source Bloomberg

IN THE PIPELINE

Zone 5 is considered one of the most significant copper deposits in Botswana

at some point. Therefore, he does not foresee that the temporary low period in copper prices will preclude CCC and KCM from progressing with their projects.

Coyle highlights that working in Botswana has been satisfying, and the Ministry of Mines, Energy and Water Resources has been professional, but supportive of CCC's efforts. ■■

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