

MINING REVIEW

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Mining shoulders hope for Malawi economy

- As firms scale up exploration activity

By Mining Reporter

The mining industry is poised to become one of the major pillars of Malawi's economy as private investors have scaled up exploration activities with their ongoing results unveiling key prospects for the budding sector.

President Bingu Wa Mutharika's administration, which is working to turn Malawi into a predominantly exporting country, splashed new energy into the mining sector after it rated it among its nine priorities in its economic growth agenda back in 2004. Mutharika later launched Paladin Africa's Kayelekera Uranium Mining project in Karonga, which manifested to the mining fraternity world over that Malawi has an investor friendly environment that can sustain friendly to large scale mining operations.

Information collected from the Department of Mines and Geological Survey shows that the promotional campaign for the sector that the government has undertaken since then is producing encouraging results with more mining firms investing in exploration projects in Malawi.

With Australian firm Paladin Africa's Kayelekera Uranium Mine in Karonga already on stream, there are now expectations that the Kanyika Niobium Mine in Mzimba, owned by another Australian firm Globe Metals and Mining, will also go into production by 2014.

Globe is carrying out a definitive feasibility study on the Kanyika Niobium Project which is now in full swing after the company signed an investment agreement with Chinese Exploration and Mining Company, which has invested US\$48 million in Globe for 52% equity in the ASX listed parent company.

"All aspects of the feasibility study are now in full throttle including, amongst others, the Environmental and Social Impact Assessment (ESIA) process, mine design and infrastructure and power studies," says Globe's African Projects Manager Dines Kruger. The Kanyika Project contains 55.3-



Professor Mutharika: included mining among priorities.

million metric tonnes of inferred and indicated mineral resource, which will support a 20-year mining life producing 3,000 metric tonnes of niobium metal per year.

Globe intends to set up a processing plant that will produce ferro-niobium metal as a primary product catering for 77% of production revenue while tantalum and uranium oxide will be produced as by-products and will account for 15% and 8% of the production revenue respectively. Niobium produced at Kanyika will cater for 3-4% of the global market share for ferro-niobium. But it is not only the Kanyika

Niobium Project that is expected to become a glittering beacon in Malawi's economic sphere. With the surging demand for rare earths on the world market, there are also several rare earth prospecting projects that are in the pipeline.

A shining example is the Songwe Rare Earths project in Phalombe that is being pursued by Canadian listed firm Mkango Resources.

In recently released results, President of Mkango Resources Alex Larson says the first phase of its drilling exercise has intersected significant near

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Not rare at all

Malawi to become major rare earth supplier

By Mining Reporter

The Geological Survey Department (GSD) says Malawi is on course to become one of the leading suppliers of rare earth elements (REEs) to the world market as more investors are now flocking into the country in pursuit of several potential deposits of the 17 elements that are on high demand.

GSD Director Dr. Leonard Kalidake says Malawi is, currently, experiencing a boom in mineral exploration activities mainly targeting rare earth deposits that have been lying unexploited.

"As it has been said, Malawi's mineral wealth is largely lying unexploited. Actually most rare earth minerals were not worthy much until yesterday. And the contemporary high technology society calls for the rare earth resource today," says Kalidake.

He says Malawi has had idle deposits of rare earths also because historically, Malawi has been regarded as a country without mineral resources.

Kalidake says such a picture has now been erased in the mind of many mining investors as a result of the campaign that the government is now undertaking to promote Malawi's mineral wealth to investors.

"We are now on course to develop a new image of Malawi as a vibrant mining destination. This will be possible with the opening of rare earth mines in some of the potential areas that my department is promoting to investors," says Kalidake.

He also observes that the other major problem hampering the onset of rare earth mining operations in Malawi has been long access routes to the interna-

tional markets.

"Now with the Nacala Corridor being in operation, Malawi should skyrocket into serious rare earth business," he says.

He explains that the planned project to re-map the geology of the country will also assist its department to provide updated information on the potential rare earth targets.

The World Bank is expected to finance the remapping project under the Malawi Mining Growth Project, which will also promote the mining sector in Malawi in different ways.

Kalidake projects that the beginning of rare earth mining operations in Malawi will also trigger the development of hi-tech industries in the country.

"The mining of REEs offers potential for the production of REE-based products in terms of value adding. This will create jobs and skills development in areas such as ore processing and hydro-metallurgy technologies."

"This also means that Malawi can become a strategically important country to the western world. Additionally it will be also desirable to install solvent extraction (SX) technology and electrolysis smelting technology," he says.

He says people in the mining areas will also benefit because as the mining industry develops, a number of facilities such as roads, schools, shopping centres, water, and electricity will be developed around mining sites.

"A mine site will be a centre of various activities and other service providers will open up businesses in the area, the so-called multiplier effect."

"The facility for processing ore will not only create employment but become a centre of scientific research," he says.

He says the other key benefit is that the mining of REEs will increase Malawi's foreign exchange earnings, which will enable the government to import adequate quantities of essential commodities including drugs and fuel.

"The mining of rare earth elements is probably the best thing that has happened to Malawi's economy in a long time."

"However, in order for Malawi to reap optimum benefits from rare earth mining, there is need to intensify promotional campaign for the sector, and empower the Geological Survey and Mines Departments to aggressively develop the sector," says Kalidake.

REEs include lanthanum (La), Cerium (Ce), Praseodymium (Pr), Neodymium (Nd), Promethium (Pm), Samarium (Sm), Europium (Eu), Gadolinium (Gd), Terbium (Tb), Dysprosium (Dy), Holmium (Hm), Erbium (Er), Thulium (Tm), Ytterbium (Yb), Lutetium (Lu), Scandium (Sc) and Yttrium (Y).

The rare earth deposits found in Malawi are of carbonatite, alkaline rock related and vein type though it is also possible that the other types of deposits, which are of hydrothermal iron, ion absorption/laterite and placer types can also be discovered in the country.

A number of carbonatite zones occur in the Chilwa alkaline province and these include Kangankonde in Balaka, Turinda and Songwe in Phalombe and Chilwa Island in Zomba.



Kalidake: Malawi's mineral wealth largely unexploited

Precision surveys that were carried out by the Japanese in the late 1990s and the French in the early 1990s proved that about 11 million tonnes of ore with an average grade of 2% for rare earths and 8% for strontium exist on Kangankonde, an potentially over US\$1-billion deposit, which has been a centre of legal wrangling over nights between prospectors.

Other known rare earth deposits are at Songwe Hill in Phalombe, Machinga, Chilwa Island, Salambivhe, Mitanje Mountain, Lovonde and Balaka.

China supplies 97% of rare earth elements in the world at present, which are mainly produced from Bayan Obo hydrothermal iron deposit, Maoming carbonatite deposits and ion-absorption deposits in Southern China. However, China's central government is restricting the export and production of the elements, and the country is controlling the pricing to keep its interests and domestic needs despite its monopoly.

The development gives a chance to emerging rare earth producing nations like Malawi.

Mining shoulders hope for Malawi economy

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surface zones of rare earth mineralisation at Songwe Hill with zones of higher grade mineralisation and elevated heavy rare earth enrichment also identified.

"These intersections are reported as down hole widths and do not necessarily represent true thicknesses and attitude of the mineralized zones, the estimation of which will require further drilling and refining of the geological model," he says.

The initial drilling exercise involved the sinking of a total of 13 holes totalling 1900.9 metres, of which the results for three holes are still pending.

Lemon explains that in addition to geological mapping and surface sampling with a handheld Niton XRF, the drilling programme has demonstrated both the extension of rare earth mineralisation to depth and laterally compared other exploration programmes that were previously undertaken at the site.

"Rare earth mineralisation, in addition to niobium mineralisation, is pervasive throughout the carbonatite, fensite and breccia lithologies intersected, with zones of higher grade mineralisation and elevated heavy rare earth enrichment being identified," he says.

Globe Metals and

Mining is also involved in the search for rare earth minerals. The firm is working on the Salambivhe Project in Mwanza, where preliminary results have also indicated potential for the discovery of sizeable quantities of the minerals.

Kruger explains that soil and rock chip sampling showed encouraging results for Rare Earth Element mineralisation which included a peak value of 2% total REEs and a dysprosium value of 214ppm.

"These results are very encouraging taking into account that the sampling program was very limited. Exploration work will continue later in 2011," he says.

The ASX-listed firm is also prospecting for rare earths in Machinga with its joint venture partner Resource Star



Work underway at Globe's Kanyika Project

where results from the 2010 exploration program indicated several zones of rare earth element (REE) and niobium mineralisation.

Rare earth materials have expanding applications in markets as diverse as rechargeable batteries, permanent magnets, fiber optics and many more.

Although some of these applications have been there from time immemorial, the growth and diversity of application over the past one or two decades is remarkably assuring opportunities for continued growth for the next decade.