Malawi is traditionally an agricultural country with tobacco as the mainstay of the economy. However, the mining industry has captured attention in the year 2022 thanks to ASX-listed Sovereign Metals’ discovery of the world’s largest natural rutile deposit at Kasiya in Lilongwe District.

With Kasiya continuing to capture news headlines and social media talk in the country as many Malawians are eager to see the project move to production to significantly contribute to sustainable economic growth and poverty alleviation. State President Dr Lazarus Chakwera highlighted the project when he addressed the United Nations General Assembly in New York, USA.

By Marcel CHIMWALA
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A grouping of Civil Society Organizations (CSO) working in the extractive sector, the Natural Resources Justice Network (NRJM), has asked the Malawi Government to fast track the review process of legal and policy frameworks governing the oil and gas subsector before new investors acquire hydrocarbon exploration licences.

Coordinator for NRJN Kennedy Rashid said in an interview that this is the opportune time for the Government to finalise working on the legal and policy frameworks as all the petroleum exploration companies have relinquished their licenses.

Government is yet to finalize the formulation of a new Petroleum Exploration and Production Act to replace the 1983 law, develop a Petroleum Policy and model Production Sharing Agreement (PSA).

Rashid said: “The subsector itself is lucrative such that Malawi stands to get enormous benefits if it is developed. But the fact that up to now Government still has not formalized some of the legal and policy frameworks governing the subsector manifests that we are not ready for the industry.”

“We need to update our legal and policy framework to be in line with current international best practices in oil and gas production.”

“We believe that if we can revisit our legal and policy frameworks and develop a new strategy for the subsector we can establish a strong upstream petroleum industry. Investors do not just want to invest but to make profits and benefit from areas where they invest in.”

Public Relations Officer in the Ministry Andrew Mkonda, however, told Mining & Trade Review that the delays are not due to lack of seriousness by government but that the documents are being scrutinized by different ministries as the formulation of legal and policy instruments cannot be done by a single Ministry.

Mkonda said: “All the documents, including the draft model PSA, are going through Ministries, Departments and agencies as a consultative process.”

“After that we will consult other non-governmental stakeholders. So for now that is the response I can give.”

Currently, all six oil and gas blocks are vacant following relinquishment of hydrocarbon search licenses by the investors.

Pacific Oil Limited was the first firm to leave Malawi vacating Block 6 covering the lower Shire Valley area before EFORA Energy (formerly SacOil) relinquished its license for Block 1 covering Chitipa and parts of Karonga followed by Hamra Oil Holdings Block 2 and 3 covering the Lake Malawi area of Karonga, Nkhatabay, and Nikolaotaka and then Rakgas Block 4 and 5 covering lakeshore and Shire River sides of Dedza, Machinga, Mangochi, Blantyre, Zomba, Mulanje, Thyolo and Phalombe.

Since the four companies closed shop, the Government is yet to officially advertise the blocks to attract new investors.

However, there are concerns that the blocks are too big to be handled by one investor which have attracted calls for demarcation of the blocks before new investors acquire the tenements.

The demarcation process is supposed to be conducted in tandem with provisions of the new Upstream Petroleum Policy and the Petroleum (Exploration and Production) Act 1983, currently being reviewed by the Government.

Malawi’s Petroleum Law is considered outdated because it was enacted during the one party era hence gave absolute ownership of petroleum resources to the Life President on behalf of the People of Malawi.

Based on the existing Law, in 2009 Malawi developed Petroleum (Exploration and Production) regulations which provided legal basis for the demarcation of the six Oil and Gas Blocks in Malawi.
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It is pleasing that there is excitement in Malawi about the discovery of the largest rutile deposit in the world in Kasiya, Lilongwe.

The excitement of Malawians on the project is being propelled by the country’s leadership as State President Lazarus Chakwera highlighted the project as crucial to the country’s industrialisation dream in his presentation at the United Nations General Assembly in New York, USA.

As reported in our lead article, Sovereign Metals has hailed the recognition of the project at such an important global forum describing it as terrific endorsement of the Kasiya discovery and its immense potential.

Sovereign’s Managing Director Julian Stephens said the Company is aiming to develop an environmentally and socially sustainable operation to supply high-grade rutile to global markets.

With the Company showing such commitment to develop the project, the onus is now on Malawians to render support to the investor.

With new Mines and Minerals Act in place, Malawians should do away with any fears that the country stand not to benefit from its minerals.

Experts who developed this piece of legislation and the Taxation Act crafted the laws after studying the laws and best practices in countries that are benefitting from large scale mines, so if these laws are applied Malawi will surely immensely benefit from its large scale mines like the planned Kasiya rutile mine.

We also urge the political leadership to translate its rhetoric on Kasiya into action that will result in Kasiya and other advanced mineral exploration projects moving into production.

We surely need the political will to ensure that project documents such as Exclusive Prospecting Licenses, Mining Licenses, Mine Development Agreements, Environmental and Social Impact Assessment approvals and other permits are processed in time.

Such efficiency and decisiveness on the part of government would be a huge incentive to investment for Malawi and certainly investors already working in Malawi such as Sovereign Metals would be prompted to invest more in the country not only in fast-tracking their exploration projects to production but also in corporate social responsibility projects.

Global investors would be frustrated to invest in a huge mining project such as Kasiya if they see that government is taking ages to approve project docu-
**Kasiya rutile discovery excites Malawians**

"We are delighted that many private sector investors are flocking to join the agricultural revolution that is coming to Malawi as well as investors in mining who know that the recent discovery in Malawi of the largest deposit of rutile in the world means that Malawi’s economic rise is imminent," said Dr Chakanya.

Managing Director for Sovereign Metals Dr Julian Stephens hails the recognition of the project at such an important global forum describing it as a terrific endorsement of the Kasiya discovery and its immense potential.

"Sovereign appreciates the great support it has received from the Malawi Government and we look forward to making a significant contribution to development of the mining sector and achievement of the country’s economic vision,” he says.

The recent Expanded Scoping Study (ESS) confirmed Kasiya as a large-scale, long-life operation with a low-cost profile and future significant source of critical raw materials.

Stephens says the globally significant project has the potential to become a major producer in both the natural rutile and graphite markets whilst contributing significantly to the economy of Malawi.

He says: "Kasiya is a greenfields discovery in central Malawi which is now the largest natural rutile deposit and also one of the largest flake graphite deposits in the world."

"Sovereign is aiming to develop an environmentally and socially sustainable operation to supply highly sought-after natural rutile and graphite to global markets."

Stephens explains that Kasiya will be a simple and conventional operation using traditional and well-developed processes used across the globe on numerous mineral sands and graphite operations. He says he proposed large-scale operation will process soft, friable mineralisation that occurs from surface numerous minerals and also one of the largest flake graphite deposits in the world.

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**Development and Exploration**

Sovereign says in its recently released Annual Report for 2022 that the year has been very successful for the company in exploration, mineral resource development and initial economic studies citing that:

- • MRE update confirmed Kasiya as the largest rutile deposit ever discovered with 1.8 Billion tonnes @ 1.01% rutile and 1.32% graphite (Indicated + Inferred) equating to 18 million tonnes contained rutile and 23 million tonnes contained graphite.
- • The updated MRE confirmed Kasiya as the world’s largest rutile deposit and also one of the largest flake graphite deposits globally.
- • Expanded Scoping Study (ESS) results confirmed Kasiya as an industry-leading major source of critical raw materials as one of the world’s largest and lowest cost producers of natural rutile and natural graphite with a carbon-footprint substantially lower than current alternatives.
- • The ESS demonstrated outstanding results including:
  - A two-stage development with full production at 24Mtpa operation producing 265kt rutile and 170kt graphite per annum with a 25 year mine life.
  - Exceptional economics including a post-tax NPV8 of US$1.537m and post-tax IRR of 36%.
  - A large-scale operation with a low-cost profile resulting from the deposits near surface nature, grade, conventional processing and excellent existing infrastructure.
- • Pre-Feasibility Study (PFS) commenced with a 12,000m drilling program now completed and key globally recognised consultants appointed to the study team.

**Sales and Off-take Marketing**

Meanwhile, Sovereign Metals has entered into a non-binding memorandum of understanding (MoU) with a market leader Hascor International Group for potential supply of 25,000 tonnes of natural rutile from Kasiya per annum over a five year period.

Stephens explains that the MoU is part of Sovereign’s product marketing strategy as the demand and pricing for natural rutile are both very strong as the global structural deficit in supply continues to widen.

Sovereign Metals has also signed an offtake MoU and Market Alliance with major Japanese global trading and investment company, Mitsui & Co Ltd (Mitsui). The MoU establishes a marketing alliance and potential oftake for 30,000 tonnes of natural rutile per annum.

“The alliance will allow Sovereign to leverage off Mitsui’s extensive network and their market-leading understanding of the titanium industry and global logistics,” says Stephens.

Sovereign Metals observes in the Annual Report that in 2022 demand for high-grade titanium dioxide feedstocks continued to remain strong, and along with supply shortages leading to continued rutile price appreciation, with realised prices of +US$1,500/t recorded in the June 2022 quarter and spot price currently +US$2,200/t.

The Natural rutile market is in structural deficit with current global supply estimated to decline 45% in the next three years with graphite demand also set to soar as electric vehicle production is forecast to increase 12-fold by 2040

**Low Carbon Advantage for Two Critical Raw Materials**

Like many other industries globally, the titanium dioxide pigment industry is targeting reduced carbon emissions, reduced energy consumption and a move towards renewable energy and waste minimisation. Sovereign says in the Annual Report that a shift towards a greater percentage of natural rutile feedstock offers the titanium pigment industry a simple and short lead-time opportunity to significantly lower its carbon intensity and total environmental impact.
Sovereign embarks on major borehole drilling project for Kasiya Community

By Wahard BETHA

SX-listed Sovereign Metals, which is developing the Kasiya rutile project in Lilongwe District, has launched a borehole drilling project in the tenement area to ensure supply of clean and safe water to the local community.

Community Liaison Officer for Sovereign Metals Obed Mwale said the project is targeting villages which have no access to potable water.

“As a corporate citizen, we feel we are part of the community so we decided to assist them overcome the challenge of lack of potable water,” Mwale said.

Mwale also said the company will embark on rehabilitation of non-functional boreholes in some villages within the tenement area after installing new boreholes in the selected villages.

Village Headman Chakwanila, whose village is a beneficiary of the initiative, hailed the Company in an interview saying access to safe water in the area has been a problem especially during the dry season.

Chakwanila said the problem has mainly affected women who are forced to walk long distances in search of potable water.

“We only have water in our dugout wells for few days after the rainy season then it gets dry. With this initiative by Sovereign, it will be the first time for our village to have a borehole.”

Chairperson for Thumba One Village Development Committee (VDC) Joseph Austin concurred with the Village Headman in hailing the Company for the project saying it has come at an opportune time when a cholera outbreak has hit parts of Malawi.

Austin also said the project is important in that it will lessen the danger of children drowning in dugout wells.

He said: “This year we had a funeral in our village as one kid fell into a well, which means apart from saving water this project will save the lives of our little ones, and even the livestock.”

“We also believe with these boreholes functional, we will be safe from water borne diseases which have been common in our villages,” he said.

Sovereign has also constructed boreholes in Malingunde where it is prospecting for graphite. In Malingunde, the Company has also built a community centre in which members of the local community assemble for development meetings.

The Company is also running a scholarship programme that is supporting eight students in Kasiya who are now at secondary level covering school fees, accommodation, food and other necessities.

Sovereign has also identified four initial schools in the neighboring community of Kasiya which will significantly benefit from the Company through access to additional learning materials and upgrades to their learning environment.

“Sovereign understands the importance of education for young Malawians. At a community level, the Company is working to improve the local learning environment and is employed at the sample processing laboratory in Lilongwe and a further 11 people from Santhe are employed in sample preparation at the Company’s Santhe facility near Kasiya. In addition, four people from the Malingunde Graphite Project area are employed in the Lilongwe laboratory. Local people are also employed for additional assistance on a temporary basis during exploration drilling programs.

Currently, Sovereign has 45 employees and is an equal opportunity employer with a gender diverse workforce. 60% of the company’s professional Malawian staff and at least 50% of regular interns are women.

Sovereign Metals has established a rutile sample laboratory in Area 4, Lilongwe where it has employed a diverse workforce and is developing key exploration and mining-applicable skills through training programs.

The facility has the ability to process over 60 drill samples per day with the processing monitored by advanced quality assurance procedures.
Government dragged to court over Chambe Hill rare earths project

By Bester KAYAYE

Locak mining firm Akatswiri Mineral Resources (AMR) is seeking a judicial review from the High Court on the decision by the Forestry Department in the Ministry of Forestry and Natural Resources that the Company gets endorsement from Mulanje District Council and other stakeholders in order for the Department to decide to grant it a permit to proceed with its exploration work for rare earths in Mulanje Mountain.

The Forestry Department inserted a condition in AMR’s renewed Exclusive Prospecting Licence (EPL) requiring the Company to get endorsement from the District Council, Mulanje Mountain Conservation Trust (MMCT), Environmental Affairs Department and Blantyre Water Board in order to be permitted to continue with exploration work.

But through their lawyer Timothy Chirwa, AMR says the delays to get the permit from the Forestry Department due to this cumbersome process has cost them a foreign investment partner who pulled out from the project due to the bottlenecks.

In a letter addressed to the Department of Forestry and Attorney General Thabo Chakaka Nyirenda, AMR through the lawyer is seeking the Department to provide the specific provision in the Forestry Act or in any Act or piece of legislation which has used to impose this condition on its renewed EPL and reasons why it did not insert a similar condition in the original license which was granted to AMR.

The letter states: “Your office has granted Akatswiri Mineral Resources Company Limited (AMR) a licence, dated 18th February 2022, to explore/prospect/extract minerals in the Mulanje Biosphere. In this licence, you have inserted a condition, in Clause 1013 thereof, requiring AMR to first obtain an endorsement from Mulanje District Council following a debrief on results of consultations AMR has to have with some stakeholders before it can commence its exploration work.”

“Your office has also written the office of the District Commissioner for Mulanje District stating that the said licence is subject to an outcome of these consultations.”

“AMR is our client. They have given us instructions to ask your office, which we hereby do, to provide the legal basis of this condition. May you provide specific provisions why, by inserting this condition, you have departed from the usual conditions in the gazetted template of a licence of this kind and the specific legal provision which requires an endorsement from the relevant District Commissioner or District Council before a licence to explore/prospect/extract minerals in a forestry reserve can be issued.”

He explained that the investor AMR partnered in the Mulanje Mountain mineral exploration project pulled out due to the delay to get a permit from Forestry Department after a lot of resources had already been spent in anticipation of the commencement of the exploration works.

Reads the letter: “The investor is aware that the previous holder of an exploration license covering Mulanje Mountain was forced to abandon the project because of a hostile political environment which some actors had created for him. The investor has seen a repeat of the same situation, and wants to avoid further losses. It is a self-evident fact, from your letter to District Commissioner for Mulanje, that your office, in league with some stakeholders, does not want this project to take place. In the circumstances, we hold your office responsible for the pulling out of the investor from the project.”

Meanwhile, the Area Development Committee (ADC) for Chambe Basin in Mulanje mountain biosphere reserve has penned the District Commissioner and MMCT seeking clarification from the two offices over delays to clear AMR to commence exploration works at the site.

The ADC describes the delays by the Council to give a go-ahead to AMR to proceed with exploration work as retrogressive in a country whose vision is to attain industrialization through mining operations.

In the letter made available to Mining and Trade Review, the ADC says it is surprised that AMR is being denied a permit to conduct exploration at the site while previous tenement holders such as Springs Stone were exploring the area without any conditions attached.

Suwedi says AMR has established good relations with the community following its community sensitisation meetings and urges government to grant unconditional license to the firm so that it continues with plans to implement corporate social responsibility projects.

He says: “Akatswiri Mineral Resources already started engaging communities through different activities from which we have benefited as members of the community. We would like to demand that the Forestry Department issues a permit to the Company without any other additional conditions.”

“We, concerned citizens, fully support this project since we already started getting involved in different activities Akatswiri launched.”

But in a directive to Mulanje District Commissioner made on February 22, 2022, Director of Forestry Dr Clement Chilima claims that AMR did not comply with recommendations by the District Council on consultations whereby the firm was supposed to engage various environmental stakeholders working in Mulanje Biosphere before commencing exploration works.

Chilima says: “We have inserted a condition in the renewed License that Akatswiri shall obtain an endorsement from Mulanje District Council, based on a report submitted to the Council, of the results of consultations, as recommended by the District Executive Committee meeting of 23rd July 2020, the District Development Committee Meeting of 4th November 2021 and the Extra-Ordinary Full Council meeting of 5th November 2021.”

“The License stipulates that the following key stakeholders must be consulted; MMCT, Department of Forestry, Environmental Affairs Department and Blantyre Water Board. A condition of the License is that it shall be automatically terminated, if the above and any other License Conditions are violated/not fulfilled.”

Chambe is a large, weathered ionic adsorption clay-hosted (Ionic Clay) Rare Earth Elements (REE) project which contains kaolinitic soils which could lend itself to carrying bulk REE deposits. Historic exploration work was carried out on the site between 2009 and 2014, confirming the presence of mineralised Rare Earth Oxide clays, similar to many of the larger, high-value Heavy REE mines in China.

Analysis of samples from 2010 shows that the soils contain from 475 to 739 ppm total REE, including the key Neodymium and Praseodymium (NdPr) metals. The benefits of extracting REE from shallower ionic clay deposits include lower operating and capital costs, as well as shorter times for development.
A general overview on Formalization of Artisanal Small Scale Mining/Miners (ASM)

Formalization of Artisanal Small Scale miners is a complex process but it is very vital to the improvement of miners’ lives. Ultimately, it involves participation of many stakeholders. Formalization entails recognizing ASM in the first place and then having proper policies and governance in place and from a legal perspective, formalization means miners and cooperatives are registered with the government using proper mining channels and processes. In other countries ASMs are recognized by law, but the very same governments haven’t created an enabling environment for miners to obtain proper permits and licenses. Other aspects of formalization include, supply chain transparency, health, safety and environment, human rights protections, chain of custody, access to finance, using and following proper mining techniques, as well as sound policies, procedures and due diligence systems in place. The process of formalization may include the introduction of legal and regulatory frameworks, providing legal access to minerals and information about geological data, organizing miners into flexible and dynamic organizations and providing access to capital, equipment and technical assistance.

The context surrounding artisanal Small Scale mining in different regions varies. In some cases, ASM has been a source of livelihoods for families and communities for decades while in other areas, the high value of minerals, particularly during periods of high prices, draws populations looking for income during conflict or insecurity. In many developing countries, the government’s ability to regulate the ASM sector is weak. Many artisanal Small Scale miners continue to operate in an informal manner, where legal or regulatory frameworks may not exist. Legal access to minerals may be limited as well as access to capital, equipment, and technical assistance. Different countries have taken different approaches to working with artisanal small scale miners and managing them. Several countries have introduced policy measures trying to legitimate or formalize artisanal mining and have yielded varying results.

However, interesting developments have been made on Best Practices: Formalization and Due Diligence in Artisanal and Small-Scale Mining, in countries like Mozambique, Columbia and in Africa, DRC.

Findings in most countries have revealed that despite showing considerable promise at first, the drive to formalize ASM has lost considerable momentum. This among others may be due, overlapping of responsibilities, bureaucratic/archaic licensing scheme and also lack of access to information about miners and their dominance. For example, efforts to formalize ASM in Malawi are new and need a vigilant system to put things in order. With the enactment of the New Mines and Minerals Act, ASM Policy in place, Malawi still stands a chance on the road to formalization.

Success of Formalization of Artisanal Small Scale Mining

As a matter of success of formalizing ASMs, there are some factors that need to be considered in all aspects and these are;

- Providing Access and acquisition of Equipment.
- Ensuring Access to Capital, Microfinance credit and savings, or other legal revenue generating activities.
- Enabling dialogue between ASM Stakeholders and governments.
- Providing Access to geological Data.
- Developing Conducive and Comprehensive Legal Frameworks.
- Developing and enhancing More Capacity Building
  If existing government regulations, and probably else.

The following may result from informal mining activities:

- Environmental risks may go unchecked that eventually threaten the ecosystem.
- Health risks due to no PPE and peoples’ behaviours.
- No legal and regulatory framework to protect the miners/workers.
- Emergence of child labour in the mining sites.
- Illegal armed groups may emerge in the industry to fund violence.
- ASMs may move into protected areas e.g. in Malawi where they have moved in National Parks and Forest reserves leading to arrests.

Way Forward to Formalization of ASMs

- Prevent People from Engaging in Illegal ASM through provision of policy and governance direction.
- Facilitate government supported legalized ASM Sector through necessary documentation.
- Provide Licences to ASMs and demarcate those areas for Licensed miners.
- Facilitate/ help ASMs in equipment acquisition through microcredit facilities.

What happens when ASM is Informal without Formalization.

In informal mining often refers to individuals or cooperatives who are engaged in ASM, but operating outside of a legal framework that grants them rights to mine. Informal mining is often tolerated by many governments and may also be considered legitimate by local communities. An example is where the Malawi government is buying gold from informal ASMs through Export Development Fund (EDF) on behalf of the Reserve Bank of Malawi. While informal mining is technically done without legal access to land or minerals, it is not necessarily associated with illicit or criminal activity—though informal miners are more vulnerable to illicit actors looking to take advantage. The following may result from informal mining activities:

- Environmental risks may go unchecked that eventually threaten the ecosystem.
- Health risks due to no PPE and peoples’ behaviours.
- No legal and regulatory framework to protect the miners/workers.
- Emergence of child labour in the mining sites.
- Illegal armed groups may emerge in the industry to fund violence.
- ASMs may move into protected areas e.g. in Malawi where they have moved in National Parks and Forest reserves leading to arrests.

The Author is a Consulting Geoscientist with experience in Mineral Exploration, Mining Geology, ESIA, Ground Water Resources and Occupational Safety, Health and Environment.

Contact(s) on: igkamz@yahoo.com
Phone: 0999 216 869
Malawi glass sands

Abstract
Substantial deposits of glass sands occur in dambos around Mchinji. Recoverable reserves in six dambos amount to 1.6 million tonnes. Silica percentage for the sand varies from 96% to 99% while the iron percentage varies from 0.12% to 0.2%. The deposits are suitable for the manufacture of good quality glass. The Lake Chiuta sand bar is estimated to have 25 million tonnes of glass sand containing 92.7% silica and 0.62% iron. Further beneficiation will improve the quality of the sand to make it suitable for the manufacture of plate glass and amber glass containers. Scrubbing and magnetic separation can lower iron percentage and unlock more production of other glass products.

1.0 Introduction
Mchinji glass sands exist in dambos within Map Sheet 1332D4 of the Malawi Survey Maps. They are within 110 km range west of Lilongwe and about 8 km to the south of Lilongwe - Mchinji tarmac and railway line (Figure 1). The dambos are located at Sankhani, Sampahale, Chiipaume, Kafulama, Tsumba, Elenesito (Kanjira), Ngoni, Kapepe, Kadosi and Jailosi.

Lake Chiuta Sand Bar has over 92% of its quartz within a grain size of 120 and 30 mesh.

Table 1: Assessed Reserves and Iron Content of the Glass Sand Deposits in Mchinji

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>FgO CONTENT (%)</th>
<th>RESERVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mchinji Dambos Sand</td>
<td>720.14</td>
<td></td>
</tr>
<tr>
<td>Chirwaya emite</td>
<td>0.12</td>
<td>125.22</td>
</tr>
<tr>
<td>Chiipaume</td>
<td>0.16</td>
<td>95.38</td>
</tr>
<tr>
<td>Tschibwe II</td>
<td>0.19</td>
<td>154.29</td>
</tr>
<tr>
<td>Katsho-Thumb</td>
<td>0.17</td>
<td>105.05</td>
</tr>
<tr>
<td>Nalumii</td>
<td>0.19</td>
<td>90.93</td>
</tr>
<tr>
<td>Elenesito</td>
<td>0.20</td>
<td>135.95</td>
</tr>
<tr>
<td>Late Chiuta Sand Bar</td>
<td>0.62</td>
<td>25,000,000</td>
</tr>
</tbody>
</table>

Table 1 summarises specifications on chemical composition for glass sand as recommended by the Ceramic Society. Together with iron and steel, glass sheets constitute a major proportion of modern buildings. The project may not necessarily promote foreign direct investment as it involves an industrial mineral. It is a good candidate for import substitution of glass products and should be promoted by a State-owned enterprise to create jobs and promote new infrastructure development.

2.0 Silica sand deposits
Malawi has two types of silica sand deposits. These are dambo sand and beach sand. Known deposits include Mchinji dambo sand and Lake Chiuta sand bar (Table 1).

3.0 Economic assessment
For this to contribute to industrialization and urbanization, we can utilize the sand directly for production of glass sheet, plate glass and amber containers (Table 2). Further processing can lead to production of:

- Artificial abrasives (sandpaper)
- Metallurgy
- Chemicals (Sodium silicate, silicon tetrachloride, silicon gel)
- Ceramics, frits (glass materials) e.g., containers
- Roofing material (paint)

This can be achieved using processing method shown in Figure 3 and reduction of iron content through scrubbing and magnetic separation.

4.0 Conclusion
Glass sand will constitute an important component in urbanizing Malawi. This will offer flat sheets complementing iron and steel in the construction of modern buildings and save the environment through less use of burnt bricks. Manufacturing of amber glass containers or bottles will be promoted, creating wealth and employment. This will be made possible through public and private sector participation in partnership with a State-owned enterprise. This arrangement will help promote import substitution and empowerment of citizens in developing avast array of projects.

5.0 References
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Minister markets Malawi’s mineral potential to Australian investors

By Wahard BETHA

Minister of Mining Albert Mbawala says his attendance of this year’s Africa Down Under Conference in Australia was beneficial as he managed to market the country’s unexploited mineral potential to mining investors.

Mbawala told Mining & Trade Review in an interview that besides making a presentation on ‘Malawi as a Mining Investment Destination in Africa,’ he interacted with some Australian investors including those doing mineral exploration and mining activities in Africa.

Mbawala said: “In my presentation to delegates drawn from different countries, I highlighted the mining opportunities in Malawi including key issues in terms of geology and mineral resources.”

“I pointed out efforts the Government of Malawi is putting through my Ministry in updating the country’s geological database, which forms a base for mineral resource development. For example, the acquisition of high resolution airborne geophysical data (magnetic, radiometric and gravity) that is available for investment decisions.”

“Apart from attending the conference, I further interacted with several mineral exploration and mining companies on the mining investment opportunities in Malawi and invited them to come and invest in the country.”

Mbawala said the investors he met include: Apollo Minerals Limited which is interested in the exploration and mining of Zinc and lead; Black Rock Mining Limited which is interested in the exploration and mining of graphite and is currently exploring for graphite in Tanzania; Leo Lithium, Peak Rare Earth Company which is interested in the exploration of rare earth minerals and is currently exploring for rare earths in Tanzania; PW Mining International (Ghana), KEFI Gold, and Copper PLC which is focused on gold and copper deposits in highly prospective areas.

Mbawala said during the interactions he spelt out some of the incentives the government has put in place to make exploration and mining activities attractive in Malawi.

The incentives include the importation of duty free equipment for exploration and mining activities, and the introduction of the web-based mineral cadastre for transparency in licencing for all tenements on “first come, first served” basis.

The Malawi delegation also had an interface meeting with Australia’s Assistant Minister of Foreign and Commonwealth Affairs in which they discussed mineral projects implemented in Malawi by Australian companies registered on the Australian Stock Exchange.

“Indeed, the Australian Government assured Malawi of its tremendous support in capacity building in the areas of contract negotiation and technical training of mining engineers, metallurgists, mineral economists and related mining experts.”

The Mining Minister also held a meeting with Sovereign Metals & Mining Directors at their offices where he was given the progress report on Kasiya Rutile and Malingunde Graphite Projects in Lilongwe.

After the meeting, Sovereign Metals took the Minister to Keysbrook Heavy Mineral Sands (HMS) Mining Project within Perth, Capital City of Western Australia.

The purpose of the field visit was to appreciate the similarity of the Project with the planned Kasiya Rutile Project in Lilongwe.

Mbawala said: “The Kasiya Rutile Project is similar to the Keysbrook HMS Project in that they are both located in the suburbs of the city where environmental and land issues might be of primary concern.”

“However, as we observed at Keysbrook, environmental issues are managed through proper land rehabilitation. As indicated by Sovereign Metals, mining and land rehabilitation issues might be of primary concern.”

Mbawala highlighted mining opportunities in Malawi at Kasiya will be similar to that of the Keysbrook.”

“The major difference shall lie in the treatment of top soil. The Kasiya Project shall blend the subsoil with organic material sourced from elsewhere and use the blended material for backfill, since the top soil from the project site is highly enriched with rutile mineralisation as compared to the Keysbrook, which is barren.”

Mbawala highlighted mining opportunities in Malawi as beneficial as he managed to market the country’s unexploited mineral potential to mining investors.

The sector was also affected by failure of some foreign investors (including Lancaster Exploration Limited and Globe Metals and Mining Company) to come into the country to conclude the Mine Development Agreements (MDAs).

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