

## More commercial-scale tests confirm world-class quality of Epanko graphite

*Results continue to show the product will be in strong demand in several key markets including lithium-ion batteries and cutting-edge technologies*

### Key Points

- Latest tests provide further strong evidence of the high quality and saleability of graphite from Kibaran's Epanko project in Tanzania
- Commercial-scale flotation tests replicate the successful results of the smaller pilot-scale tests
- Tests by an independent end-user establishes the suitability of Epanko graphite for producing premium-priced graphite foil used in cutting-edge technologies
- Commercial-scale testwork underway for production of battery (spherical) graphite for use in lithium-ion batteries
- Results of all these tests to form part of Kibaran's studies on expanding Epanko's capacity from 40,000tpa to 60,000tpa and feasibility work on downstream processing

**Kibaran Resources Limited** (ASX: KNL), ('Kibaran' or the 'Company') is pleased to announce that commercial-scale testwork continues to confirm the high quality of graphite from its Epanko project in Tanzania, with the results demonstrating the product's suitability for use in a range of industries.

These results are important because not only will they help determine optimum processing routes, but they will also assist in maximising sales prices. They will also help underpin studies to expand Epanko's planned production capacity by 50 per cent to 60,000 tonnes a year of graphite concentrate.

The results will be central to Kibaran's feasibility study on downstream processing of its graphite concentrate to produce spherical graphite for use in lithium-ion batteries.

### TESTWORK DETAILS

#### Flotation Tests

Processing of the 200-tonne bulk sample through a commercial-scale plant returned results which replicated those of the Bankable Feasibility Study (BFS) pilot-scale testwork. They also demonstrated excellent liberation of Epanko ore via simple flotation in a large-scale production test. Analysis of the final concentrate showed carbon levels of more than above 96 per cent in the large-size fractions of +50, +80 and +100 mesh. Smaller flake fractions of -100 mesh (-150 micron) had a carbon content of 95 per cent.

The commercial-scale flotation test was aimed at providing sufficient concentrate for use in production-scale battery grade testwork and other end uses being targeted by Kibaran.

The results have also provided further confirmation of the high quality of Epanko ore, which means it requires less grinding and flotation compared to many other graphite ores.

This ultimately means simpler and lower cost processing and the preservation large flake size in concentrate with less grinding.

### **Battery (Spherical) Graphite - Production Scale Test**

Commercial-scale testwork is now underway for the production of battery (spherical) graphite for use in lithium-ion batteries. The product specification is provided from Japanese partner Sojitz Corporation and will be prepared in accordance with the leading anode material producers from Japan and Korea.

The testwork will also evaluate coated and uncoated spherical graphite.

### **Expanded Graphite – Leading Producer Results**

Kibaran has successfully produced expandable graphite through a leading producer of superior quality graphite foil.

Kibaran delivered purified +50 mesh flake (Carbon content >99.5%) which was then converted at the foil manufacturer's facilities with their standard process to expandable graphite.

The graphite was subsequently expanded. The test showed exceptional characteristics, with the producer impressed by the very low content of halogens of the purified graphite, which is a key requirement for high-tech graphite foils.

The advantage of Kibaran's graphite from the Epanko deposit is that naturally it has a very low content of halogens and other undesirable elements.

Kibaran has been invited to deliver larger quantities of +50 mesh grade but also other grades to the hi-tech foil producer in larger quantities to conduct processing tests in their foil production plant.

Expanded graphite commands a higher price and Kibaran expects this market to grow over the next decade due to its use in emerging technologies.

This is further confirmation from another major end-user of the superior quality of the Kibaran graphite, based on a combination of different characteristics such as high carbon content in the ore, a high percentage of large flakes, a low percentage of intrinsic impurities and ease of processing.

The ability of Epanko graphite to cater to a wide range of applications from traditional markets such as refractory and friction to growth markets such as graphite foil and lithium-ion batteries provides Kibaran with a significant competitive advantage and the opportunity to add significant value through downstream processing.



*Graphite foil produced from Epanko graphite concentrate*

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