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ASX ANNOUNCEMENT

Outstanding results support Kibaran's strategy to establish battery graphite processing business

Optimisation tests show Kibaran's environmentally-friendly **EcoGrafi** process is extremely effective in processing graphite from a wide range of sources into a product suitable for use in lithium-ion batteries

Highlights

- Optimisation study in German pilot plant confirm Kibaran's proprietary **EcoGrafi** non-hydrofluoric purification process is highly effective in processing graphite into a form suitable for use in lithium batteries
- The tests showed there was a significant reduction in consumables and processing time compared to the feasibility study
- Optimisation study demonstrated that **EcoGrafi** can be used to purify graphite from a wide range of sources. The achievements included:
 - Treatment of graphite from Kibaran's Epanko Project in Tanzania including battery (spherical) graphite and fines from spheronization (a low value by-product) produced up to 99.98% carbon
 - Graphite from 10 other global sources produced up to 99.98% carbon
 - Seven natural large flake graphite samples produced carbon levels above 99.95%
- Results of the optimisation work will be used to update the 2017 feasibility study on a downstream processing project using **EcoGrafi**
- Updated feasibility study will then be used in negotiations with strategic investors
- Agreement finalised for long-term supply of standard grade graphite (minus 100 mesh at 94% carbon) which will be used as feedstock to support stand-alone downstream business for stages 1 and 2

Kibaran Resources Limited (Kibaran or the Company) (ASX: KNL) is pleased to report that test results show the Company is making significant progress in its strategy to establish a standalone downstream graphite processing business to supply the lithium battery industry.

The results of the optimisation testwork using Kibaran's proprietary **EcoGrafi** purification process supports the development of a stage 1 plant producing 3,000tpa of both unpurified battery (spherical) graphite and fines. The stage 1 plant is part of the Company's phased commercialisation plan to deliver battery (spherical) graphite to the global market.

The pilot plant optimisation results demonstrate the significant EcoGrafi technical and commercial advantages of **EcoGrafi**. This milestone underlies Kibaran's confidence in securing a significant share of the battery anode market, as an alternative eco-friendly supplier to the battery energy markets, inclusive of e-mobility and energy storage.

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Figure 1 : EcoGraf production comparison – battery (spherical) graphite

	EcoGraf	Existing Supply
Purification grades	>99.98%	>99.95%
Purification of fines	Yes	No
Excludes toxic hydrofluoric acids	Yes	No
Ethical and environmentally friendly	Yes	No

Kibaran has also finalised its supply agreement to secure feedstock for the stage 1 and 2 phased commercialisation program that is based on forecast demand requirements provided by several leading anode manufacturers (refer figure 2). The feedstock material is standard grade graphite (minus 100 mesh at 94% carbon) currently produced by a number of natural flake graphite suppliers. Feedstock costs will be based on prevailing global market prices for equivalent graphite products with annual tonnage requirements of 6,000 tonnes in 2019 and 10,000 tonnes in 2020.

The Company is engaging with GR Engineering to update the feasibility outcomes announced to the ASX on the 5th December 2017 and looks forward to providing further details shortly.

Figure 2 : Phased commercialisation strategy to produce purified battery graphite

Phase	Battery (Spherical) Graphite	Feedstock	2018	2019	2020	2021
Stage 1	3,000tpa (unpurified) customer trials and sales	6,000		██████████		
Stage 2	5,000tpa (purified)	10,000		██████████████████		
Stage 3	20,000tpa (purified)	40,000			██	

EU Battery Alliance now forecasts significant European battery mineral demand in the near term (refer http://europa.eu/rapid/press-release_IP-18-6114_en.htm), following the German Government announcement on 18 September underlying the development of a lithium-ion cell production facility (Gigafactory) in Germany. This supports Kibaran’s view that Europe and the Asia-Pacific will each establish production centres due to the strategic and competitive nature of the end users.

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