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ASX ANNOUNCEMENT

EcoGraf Confirmation Testwork Update

Kibaran Resources Limited (“Kibaran” or the “Company”) (ASX: KNL) is pleased to announce an update on the EcoGraf confirmation testwork being undertaken as part of pre-development activities for the proposed Kwinana battery anode material manufacturing facility to produce battery graphite for the lithium-ion battery market.

The independent testwork on the EcoGraf purification process flow sheet is being managed by Kibaran’s engineering partner GR Engineering Services Limited (‘GR Engineering’).

The testwork results have confirmed the effectiveness of the EcoGraf proprietary purification process, and the ecofriendly nature given no adverse emissions were recorded for gaseous, aqueous or solid residues.

The results have provided GR Engineering with the information required to finalise the detailed design of the process flow sheet inclusive of waste streams and equipment specific design data. Work remains ongoing to finalise the mass balance, process flows and quantification of wastewater volumes.

The completion of the testwork is expected late November.

Other pre-development technical activities underway include:

- Technical documentation for Government approvals, permitting and lease arrangements.
- Equipment testing campaign by suppliers which is expected to be completed during the December quarter.
- Final feedstock benchmarking to determine the preferred feedstocks and finalise binding purchase agreements.

The Company remains on schedule to make a Final Investment Decision for Kwinana in the first half of 2020.



Figure 1: EcoGraf simplified flowsheet for production of Battery (spherical) graphite for the Lithium-ion Battery market

Kibaran Managing Director Mr Andrew Spinks said, “Our proposed EcoGraf development is timely given the massive investment in Europe to support the transition towards electric vehicles which will require alternative and responsibly produced raw materials.”

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About EcoGraf – Kwinana Development

Kibaran plans to build the graphite processing plant on Perth's Kwinana industrial strip is based upon feasibility and engineering studies completed by Western Australian Engineering group GR Engineering Services. The proposed development has a forecast up-front capital cost of US\$22.8m for an initial 5,000tpa, followed by a further US\$49.2m to expand production to 20,000tpa of battery graphite. Pre-tax net present value is US\$141m, generating an internal rate of return of 36.6 per cent and annual EBITDA of US\$35m.

It is intended that the Kwinana facility will import natural flake graphite from existing producers and turn it into battery (spherical) graphite using the Company's patented, environmentally friendly EcoGraf process.

Battery graphite is the graphite product used in the manufacture of anodes for lithium-ion batteries. It is a 99.95% pure graphite product which is shaped and purified to meet the stringent physical and chemical specifications required by battery anode manufacturers enabling it to withstand the intense operating conditions of a battery in an electric vehicle. The final product is intended to be exported to lithium-ion battery customers in Asia, Europe and the United States.

The project's forecast economic contribution to Western Australia is significant on both an economic and strategic front and is expected to employ more than 250 construction workers and more than 125 direct employees during production.

The Western Australian Government has recognised the development of the **EcoGraf** facility would also provide broader benefits to support Western Australia's industrialisation plans, including:

- Potential production of battery anode material, which is the precursor for battery anode production and consistent with the Future Battery Industry Strategy; and
- Supporting Western Australia as a location for specialised lithium-ion battery manufacturing.

Currently all the world's supply of battery graphite is produced in China using a highly toxic purification process that requires hydrofluoric acid. There is strong demand from automobile and lithium-ion battery manufacturers in Japan, South Korea and Europe who are looking to diversify battery mineral supply chains towards an alternative supply of battery graphite that is environmentally friendly, in order to reduce their dependency on Chinese supply and to reduce environmental impacts.

Kibaran has spent over 3 years and millions of dollars in perfecting a new eco-friendly and cost competitive purification process. The expenditure covered R&D, process design, feasibility studies, piloting, product testing, product endorsement by anode manufacturers and more recently in engineering and plant design. The project will be staged, beginning with 5,000tpa of battery graphite and expanding to 20,000tpa.

Based on the current timetable, commercial production of an initial 5,000tpa will commence 11 months after the FID and expand to 20,000tpa to meet the forecast growth in demand.



Figure 2: Kwinana Industrial Area