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Electrochemical Results Confirm Superior Performing EcoGraf™ Battery Material

RESULTS DEMONSTRATE IMPORTANCE OF GRAPHITE SOURCE IN BATTERY PERFORMANCE

EcoGraf Limited (**EcoGraf** or the **Company**) (ASX: EGR) is pleased to announce further results from its electrochemical analysis of preferred feedstocks for its proposed EcoGraf™ battery graphite facility in Kwinana, Western Australia.

Key Highlights

- **EcoGraf's preferred feedstocks, including Epanko material from the Company's development ready project, demonstrated superior performance against existing material used in the lithium-ion battery market**
- **Results demonstrate the importance of battery graphite crystallinity which has a direct effect on battery performance factors such as power output, battery life and charging capability**
- **EcoGraf™ battery products uniquely positioned as a superior and cost competitive alternative material for the battery anode supply chain**

The testwork program benchmarked a number of existing feedstock supplies and provided the Company with valuable data to assist in developing a superior battery graphite product using its proprietary EcoGraf™ purification process.

Results confirmed the preferred EcoGraf™ feedstocks, including the Company's Epanko material, consistently outperformed existing material under various electrochemical test conditions.

The testwork also confirmed that the physical properties, mineralogy and degree of crystallinity of each natural graphite source directly affects battery anode performance within the lithium-ion battery. This is a significant observation as each graphite source has its own unique geological setting, with some sources unable to meet the strict specifications of the battery manufacturers.

Crystallinity is an important property in the lithium-ion battery as the level of crystallinity affects the electrochemical performance. In natural graphite deposits, crystallinity is determined by the geological setting and the extent of natural temperature, pressure forces and time that has been applied in the formation of the graphitic rocks. Higher crystallinity results from higher temperature and rock pressures for a longer period of time.

As previously reported (refer announcement *Battery Electrochemical Results* 1st July 2020) the electrochemical testwork was carried out at a leading independent German Research Institute which works with major lithium-ion battery and electric vehicle manufacturers.

Electrochemical testwork was carried out on uncoated natural graphite after processing using EcoGraf™ purification, with all parameters remaining constant to provide relative results.

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Testing measured the specific capacity (mAh/g) of each graphite product to assess its battery performance. This is a measure of the discharge current over time (i.e. amps per hour or Ah) divided by the weight of the graphite (g).

The following chart provides a comparison of the specific capacity based on the German Research Institute results.

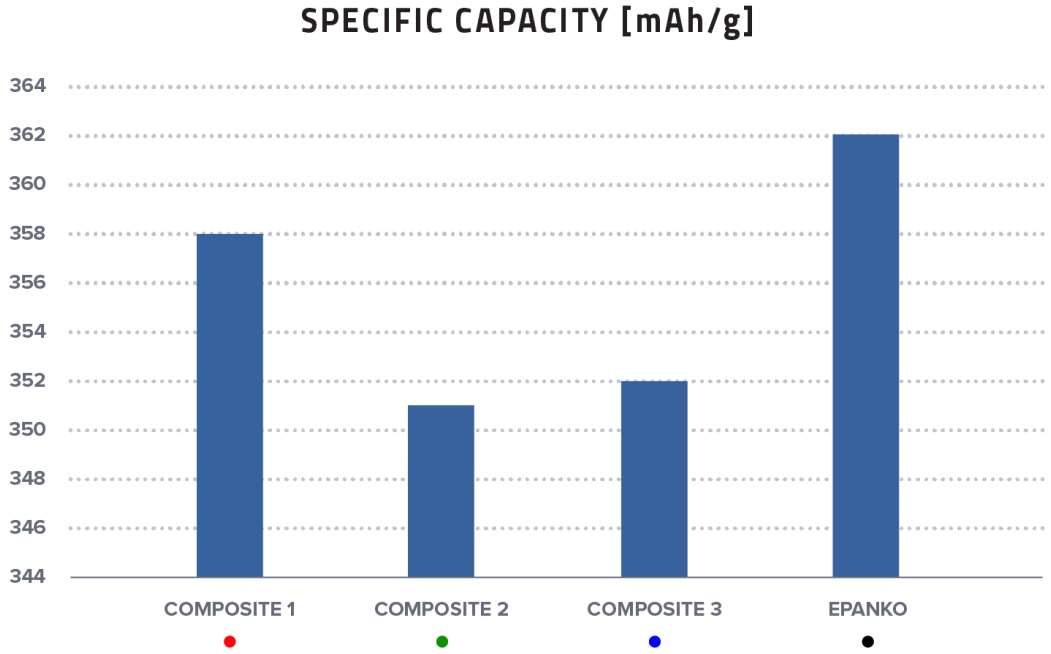

Figure 1 – Benchmark results measuring specific capacity.

The results show the best performing feedstocks, with Composite 1 and the Company's Epanko material, performing best.

The results confirm that battery graphite produced from these feedstocks can be expected to deliver superior performance when converted into battery graphite using the EcoGraf™ process.

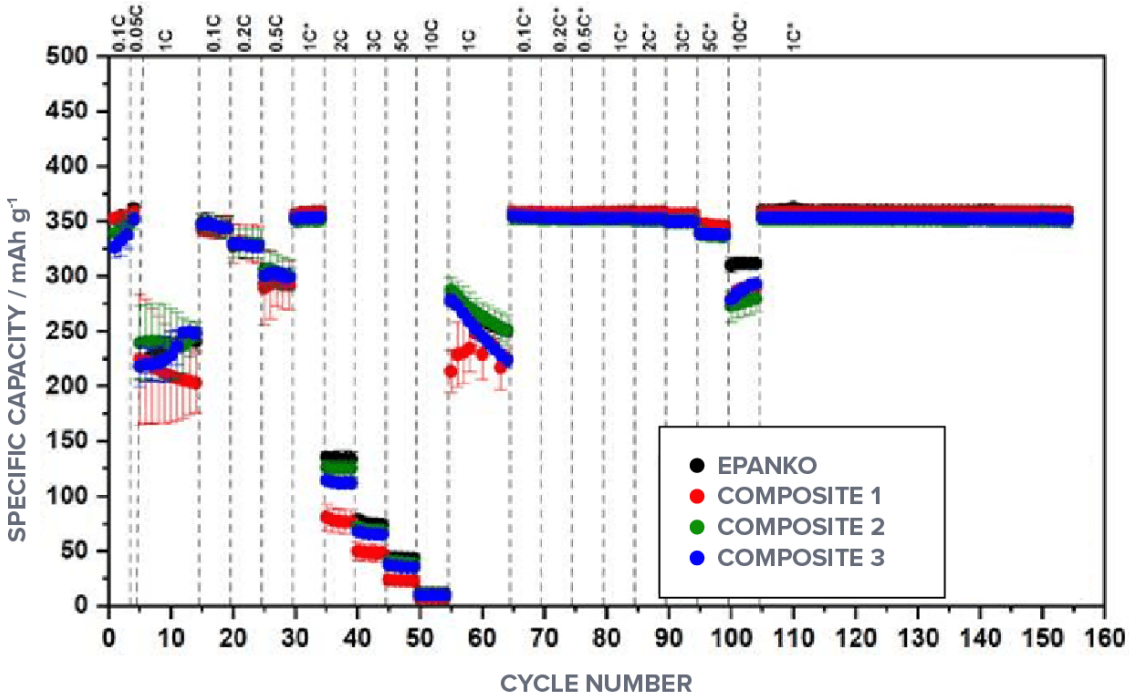

Figure 2- Benchmark results showing specific capacity under various charge conditions.

Testwork was conducted under various charging rate conditions both symmetrical and asymmetrical. This type of testwork shows the performance of the battery under various conditions, leading to more realistic and meaningful results compared to continuous testwork with non-changing test conditions.

The Charge rate or C-rate is a measure of the rate at which a battery is charged relative to its maximum capacity. For example, a 1C rate means that the charge current will charge the entire battery in 1 hour (60 minutes), a 0.2C rate means complete charging in 5 hours (60minutes/0.2 = 5 hours) and a 5C rate means complete charging in 12 minutes (60 minutes/5 = 12 minutes).

Symmetrical test conditions are where both the charge and discharge rates are equal and results are shown in Figure 2 on test cycles 1 - 64 with the various charge rates shown on the upper horizontal axis.

The asymmetrical test conditions shown in Figure 2 are test cycles 65 - 160 and marked with asterisks (*). The C-rate for charging was always 0.5C; whereas the C-rate for discharging is displayed in the chart.

Figure 2 displays all the battery performance results under various conditions and shows all materials performed well, with Composite 1 and Company's Epanko material performing best.

This announcement is authorised for release by Andrew Spinks, Managing Director.

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About EcoGraf

Founded on a commitment to innovation and sustainability, EcoGraf is building a vertically integrated business to produce high purity graphite for the lithium-ion battery market.

The new state-of-the-art processing facility in Western Australia will manufacture spherical graphite products for export to Asia, Europe and North America using a superior, environmentally responsible purification technology to provide customers with sustainably produced, high performance battery anode graphite. In time, the battery graphite production base will be expanded to include additional facilities in Europe and North America to support the global transition to clean, renewable energy in the coming decade.

In addition, the Company's breakthrough recovery of graphite from recycled batteries using its EcoGraf™ process will enable the recycling industry to reduce battery waste and use recycled graphite to improve battery lifecycle efficiency.

To complement the battery graphite operations, EcoGraf is also developing the TanzGraphite natural flake graphite business, commencing with the Epanko Graphite Project, which will supply additional feedstock for the spherical graphite processing facilities and provide customers with a long term supply of high quality graphite products for industrial applications such as refractories, recarburisers and lubricants.

EcoGraf, a unique vertically integrated graphite business, positioned for the future of clean energy.

A video fly-through of this new facility is available online at the following link:
https://www.ecograf.com.au/#home-video