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Successful Completion of Orom-Cross Graphite Project SPG Test Phase

Recent testwork has confirmed the quality of Orom-Cross graphite concentrate to generate a high purity SPG product with excellent battery characteristics

Highlights:

- Blencowe has successfully completed critical next-step metallurgical test work with initial stage SPG ("spheronised purified graphite") upgrading now completed.
- Test work was completed by two separate graphite technical experts to ensure quality control and quality assurance:
  - Leading Chinese graphite laboratory at Wuhan University, which realised SPG values of 99.96 wt%C.
  - Leading American graphite firm American Energy Technology, which generated SPG with purity values of 99.99 wt%C.
- These results prove that Orom-Cross graphite can upgrade into one of the purist SPG products, which will strengthen offtake negotiations and ultimately deliver more value to the project.
- Additional metallurgical test work proceeding with samples of uncoated SPG and other flake sizes distributed to potential off-takers and battery manufacturers.

Executive Chairman Cameron Pearce commented:

"The ultimate pre-qualification test for all graphite is how the concentrate upgrades to the 99.95% SPG product that then gets coated before going into the anode within the lithium-ion battery, and I am delighted to present these outstanding results above, which indicate that exceptional SPG products will be produced from Orom-Cross. Not only are we at the highest levels on most relevant indicators but testing has shown we can deliver other valuable products from waste material generated within the process which further strengthens our commercial model."

Mr Pearce added *"We are into one of the most important aspects of our Definitive Feasibility Study, where these tests ultimately prove the quality of the various end products we will produce, and therefore determine offtake interest and contracts. Passing these tests with flying colours is further proof that Orom-Cross is a standout project, and in a world where graphite is becoming increasingly under the spotlight as the supply chain tightens, this is of significant value."*

Blencowe Resources Plc ("**Blencowe**" or the "**Company**"), is pleased to announce that additional test work on its Orom-Cross graphite project in Northern Uganda has been completed by two leading graphite technical specialist laboratories in both China and United States. Wuhan University in conjunction with Qingdao Jinhui Graphite Co., Ltd in China and American Energy Technologies Company (AETC) in Illinois are both industry experts in the field of upgrading graphite concentrate to uncoated battery-ready SPG product. This work is critical to understanding the commercial potential of the fines concentrate specifically for utilisation as anode materials in the lithium-ion batteries for EVs (electric vehicles) and wider rechargeable battery markets.

In line with this testwork flow sheet, graphite concentrate, which is comprised of robust and thick natural flakes, was first purified then converted into a range of value-added graphite products, with a major focus on the production of spherical uncoated and spherical surface-coated materials intended for use in lithium-ion battery anodes.

Wuhan University in conjunction with Qingdao Jinhui Graphite Co., Ltd (one of the largest SPG producers in China) have completed preliminary assessment of Orom-Cross fine concentrates with the generation and subsequent testing of uncoated SPG products, following the recent 100t pilot test program. The resultant testwork has delivered an uncoated SPG product with a 99.96% purity and outstanding size distribution and characteristics. The samples generated by Wuhan University have been forwarded to battery manufacturers for coating and initial battery testing.

In parallel Blencowe also commissioned AETC to complete an assessment of the SPG potential of the Orom-Cross product. This testing was completed at the AETC facilities in Chicago utilising their Thermal Conversion Process. The value-added downstream processing of concentrate from Orom-Cross has occurred in accordance with the inverted flow sheet practiced by AETC which is unique in the market. Blencowe chose AETC to undertake comparable testwork in part due to its capacity to deliver the uncoated, coated and battery testwork within a non-acid production process. Producing SPG products in a non-acid process would have profound environmental advantages that would boost Orom-Cross's ESG credentials substantially.

After purifying the material using high temperature (but no acid or alkaline treatment) to a level of 99.99 wt% C, AETC subjected it to spheroidisation and classification. The resultant graphite has a very impressive tap density (read 'energy density') of 1.1 g/cm^3, with a surface area of <10 m^2/g. Both of these indicators highlight an extremely high grade end product.

The uncoated graphite was tested in the industry-standard CR2016 coin cells v. Li/Li+ counter electrode at C/10 charge-discharge rate. The material was seen to deliver very impressive reversible capacity of 367.58 mAh/g which is defined as "near theoretical" electrochemical performance, considering that theoretical capacity is 372 mAh, and hardly any graphite has been able to achieve this historically in practical applications. This indicator alone ranks Orom-Cross graphite as high as any other SPG product elsewhere.

The uncoated material was also surface-coated to form CSPG ("coated spheronised purified graphite"), which is the ultimate form of battery-ready graphite that goes into the anode. Application of surface coating makes batteries that use such graphite safer; additionally, graphite anodes which are composed of surface-coated graphite tend to have lower irreversible capacity loss, a key property linked to management of electrolyte levels inside an operating lithium-ion battery.

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The coated material was put into batteries and subjected to short and long-term cycling. The carbon-coated version of this graphite displayed excellent electrochemical performance, with a reversible capacity loss and reversible capacity constituting near theoretical electrochemical behaviour which positions the material from Blencowe into the class of **super-premium anode grade graphite for use in lithium-ion battery anodes.**

The long-term cycling of this material has retained an excellent stability of performance characteristics as a function of cycle life, having scored a very low 1.39% degradation. Testwork suggests that Orom-Cross graphite can support 1,438 cycles while the United States ABC requirement for EV batteries is 1,000 charge-discharge cycles. Therefore, with nearly 50% additional cycles, the Orom-Cross material is again highlighting its premium quality and is ideally suited for application in the lithium-ion battery anodes.

It is worth noting that the non-spherical portion of Blencowe's graphite (which accounted for approximately 25.6% of feed into the AETC spheroidising process) generated expanded delaminated graphite and spheroidisation process rejects, which were formulated into the composition of alkaline, lead acid batteries and an electrically conductive can coating. In all instances, the non-spherical portion of Blencowe's material offered outstanding performance, positioning Blencowe for cost leadership in that there is a strong likelihood that near 100% of all the graphite which enters a downstream processing circuit will find use in value-added applications within batteries.

Blencowe is now proceeding with additional metallurgical test work with additional samples of uncoated SPG and other flake sizes distributed to potential off-takers and battery manufacturers for upgrades to large flake as well as opportunities for utilisation of SPG wastes.

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Background

Orom-Cross Graphite Project

Orom-Cross is a potential world class graphite project both by size and end-product quality, with a high component of more valuable larger flakes within the deposit.

A 21-year Mining Licence for the project was issued by the Ugandan Government in 2019 following extensive historical work on the deposit and Blencowe is now within the Definitive Feasibility Study phase as it drives towards first production.

Orom-Cross presents as a large, shallow open-pitable deposit, with a maiden JORC Indicated & Inferred Mineral Resource deposit of 24.5Mt @ 6.0% Total Graphite Content. Development of the resource is expected to benefit from a low strip ratio and free dig operations, thereby ensuring lower operating and capital costs.

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