

31 March 2021

ASX Announcement

LARGE SCALE PILOT PLANT DEMONSTRATES OUTSTANDING TEST RESULTS ACHIEVED FROM MANIRY GRAPHITE

Highlights

- Stage 2 Large Scale Pilot Test Program is currently 2 weeks ahead of schedule
- Tests are being actively managed by BlackEarth's executive team and conducted by World Leaders in the testing of graphite and development of flow sheet and plant design
- Initial results confirm earlier Stage 1 results - grades of fixed carbon ("FC") content of over 95% reaffirming Maniry's graphite product potential as highly attractive for downstream processing and feed for the rapidly expanding electric vehicle ("EV") markets
- Additional analysis of the jumbo and large flake results indicate that approximately 20% of graphite concentrate yields are classified as jumbo flake size – such product is in world wide shortage and currently selling for in excess of US\$1,750/mt
- Further testing will continue throughout April 2021 with completion expected in May 2021
- Recently released UBS Report indicates massive growth in demand for graphite to meet EV market demand

Commenting on this appointment, BlackEarth Managing Director, Tom Revy, said: *"The Board are delighted with the initial test results achieved at the BGRIMM, world renowned Graphite processing and design facility.*

Undertaking this Large Scale pilot test program is a significant commitment by BlackEarth and we were confident the program would achieve very positive results. The outcomes to date have exceeded our expectation and only confirm the status of the Maniry project in Madagascar as being one that can produce world class graphite concentrate that is highly suitable for the EV and battery markets as well as a range of other applications – all of which are in global demand".



Figure 1 – BGRIMM Pilot Plant used for testing

The Pilot Program plan and proposed development outcomes

Under the contract with BGRIMM, the test program is planned to be completed in Q2 of 2021, and comprises the following:

- The Stage 2 large scale pilot test program will use approximately 60-70 tonnes of Maniry graphite material.
- The outcomes will be used to optimise the Maniry flow sheet, provide final equipment specifications, and the results will also provide significant input into the Project's final Environmental and Social Impact Assessment ("ESIA").
- The program will also be used to generate substantial concentrate which will assist in finalising off-take and downstream arrangements.
- Results of the program will provide additional data that will be used as the Company works toward the completion of its Definitive Feasibility Study "(DFS")
- Yield and other positive results are also being used as the Company seeks to update its project valuation to produce an updated robust and very strong financial model to underpin the projects funding and development



Figure 2 – Vibrating screen used at testing facility

Particle size mm	Size fraction yield %	US Standard Classification (1)
+0.5	1.01	P35 – Jumbo flake
-0.5+0.3	18.35	P50 - Jumbo
-0.3+0.18	19.76	P80 – Large
-0.18+0.15	14.52	P100 - Medium
-0.15+0.074	30.85	P150 - Fine
-0.074	15.52	M150 - Fine

Figure 3 – Concentrate screening results

Ref (1) - <https://www.csaglobal.com/wp-content/uploads/2019/07/PaydirtMarch.pdf>

Growth in Demand and Concentrate Pricing

Recent reports have indicated a current world wide shortage of jumbo flake graphite and projected short term shortage of all concentrate grades over the next few years (figure 4) .

As a result, material price increases have occurred and are projected to continue to grow as the strong demand for concentrate exceeds supplies in the next few years as indicated in figure 5.

Graphite Prices US\$mt

Concentrate 94 – 95FC	Price 2020	Price 2021	2022 est	2023 est	2024 – 28 est
P80 Large Flake FOB Price	US\$710	815	925	1,025	1,050 – 1,100
M100 Fine Flake – FOB Price	US\$485	590	700	800	825 – 885

Figure 5 - Source – UBS commodities report 3 March 2021

Continued Growth in demand for Graphite

The worldwide demand for graphite has grown in recent years and the impact and explosion in demand for EV energy is fuelling a faster level of growth with potential graphite shortages in the near future as outlined below.

Graphite Supply and Demand Forecast

Demand is forecast to exceed supply by 2023

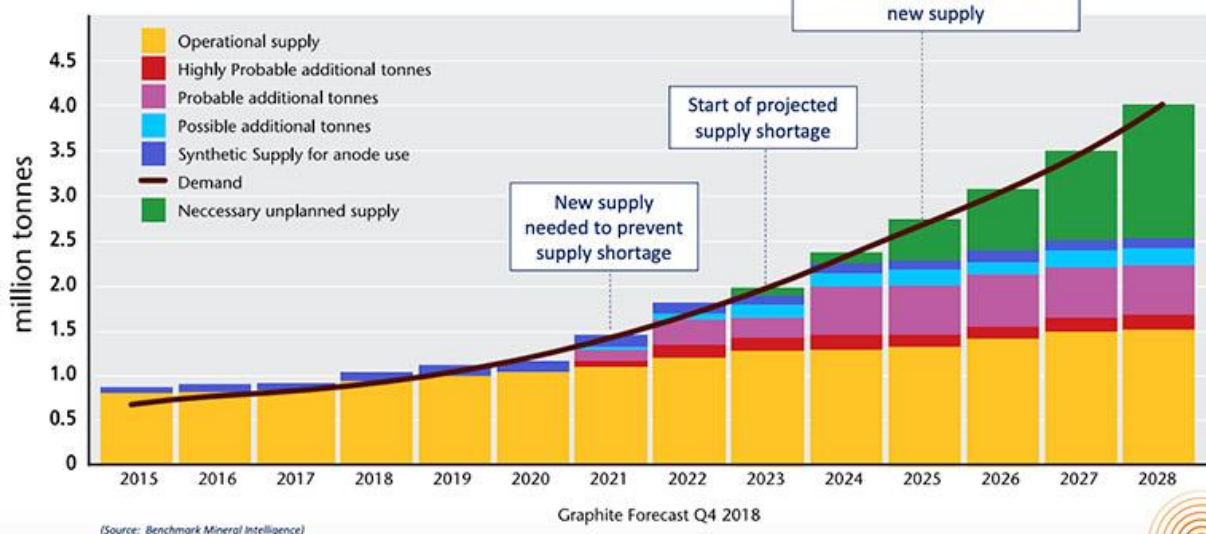


Figure 4 - Source: Benchmark Mineral Intelligence

Megafactory demand for Graphite

Much of the demand for Graphite relates to the ongoing growth and future demand for battery powered and alternative energy.

The impact of the building of 'megafactories' on the demand of graphite concentrate is projected to see demand for graphite anodes (used in the manufacture of lithium-ion batteries) to expand from 293,000 tonnes in 2021 (est) to 4,835,000 (est) tonnes by 2028 (figure 6).

Natural Flake Graphite Demand

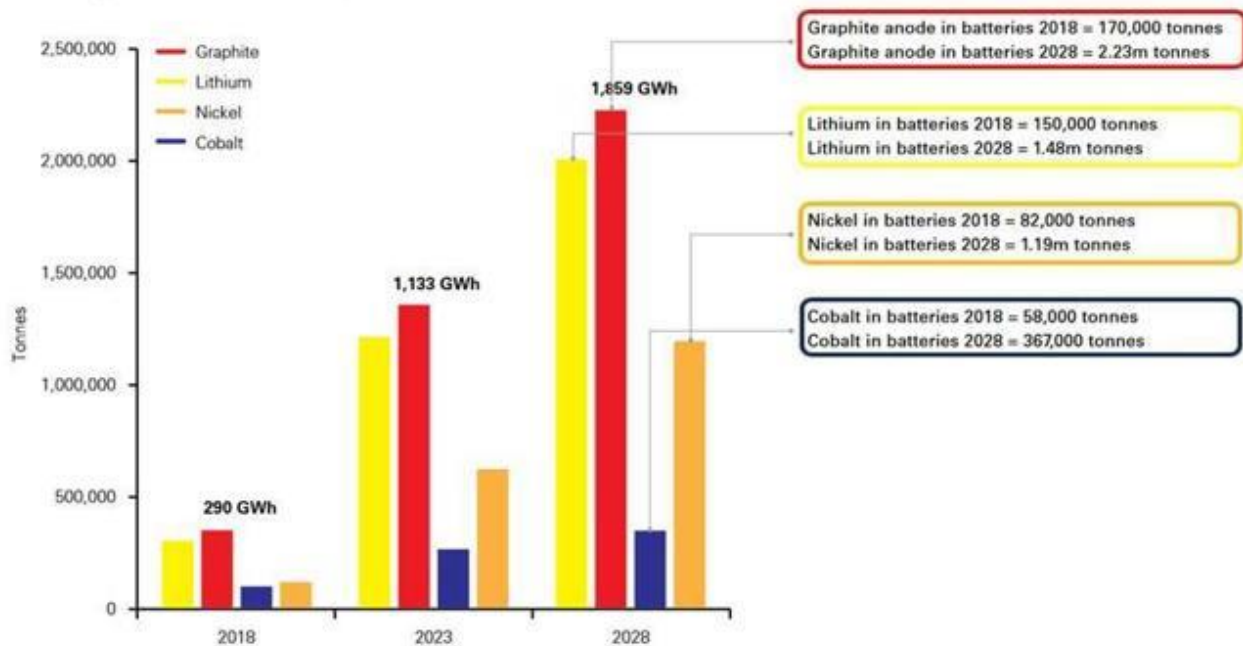
	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e
Rechargeable Battery Summary										
Rechargeable Li-ion battery demand gWh	273	422	655	959	1,363	1,835	2,425	3,055	3,777	4,605
Graphite anode feedstock demand :ktpa	293	451	697	1017	1432	1926	2547	3208	3965	4835
<i>of which</i>										
Natural Spherical Coated Graphite :ktpa	161	248	384	559	787	1060	1401	1764	2181	2659
Synthetic graphite feedstock :ktpa	132	203	314	458	644	867	1146	1444	1784	2176
Graphite anode feedstock demand :ktpa	293	451	697	1017	1432	1926	2547	3208	3965	4835
Proportion Natural %	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%
Spherical Coated Graphite Demand :ktpa	161	248	384	559	787	1060	1401	1764	2181	2659
Wastage / Yield Loss %	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
EV Flake Demand :ktpa	323	496	767	1119	1575	2119	2801	3529	4362	5319
Non-EV Flake Demand :ktpa	527	533	539	541	543	549	556	563	571	578
Total Flake Natural Graphite Demand :ktpa	849	1030	1307	1660	2117	2668	3357	4092	4932	5897

Source: UBS.

Figure 6 – UBS Commodity Report March 2021

The profound impact of the megafactories on raw material demand

Assuming a 100% utilisation rate, these are the numbers....



Source: Benchmark Mineral Intelligence

Figure 7 - Source: Benchmark Mineral Intelligence

This release has been authorised by the Company's Disclosure Committee

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BlackEarth encourages investors to update their contact details to stay up to date with Company news and announcements here: <http://www.blackearthminerals.com.au/update-details/>

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