

5 December 2019

**ASX Announcement**

## **Maniry Project Update on Testwork and Offtake Partner Agreements**

- **Current discussions have focused on high value coarse flakes for expandable graphite and high-end refractory applications.**
- **Discussions also supported by testing of fine graphite material used in the production of lithium-ion battery anode materials.**
- **World's largest producer of expanded graphite products has reported excellent quality and expansion rates from testing on BEM's coarse flake graphite samples.**
- **Deleterious impurity content reported to be significantly lower compared to other natural graphite concentrate developers and producers.**
- **Positive results and quality approval have been received from the world's leading refractory producer on BEM's natural graphite.**

BlackEarth Minerals NL (**ASX: BEM**) ("**BlackEarth**", the "**Company**") is pleased to provide an update on testing and offtake discussions for the Maniry Graphite Project (the "**Project**") in southern Madagascar.

The Company is pleased to report that ongoing testing and discussions with world leading refractory and expandable graphite producers, has continued to yield positive results from graphite concentrate samples from the Maniry project, as the Company continues to progress in formalising offtake partner agreements. BlackEarth is predominantly targeting the refractory and expandable applications, however the Company has also conducted testing on fine graphite materials used in the production of spherical graphite for lithium-ion batteries, with discussion also ongoing with leading producers of lithium-ion battery anodes.

As part of the Company's strategy to fast track the Maniry graphite project in southern Madagascar, BlackEarth has strategically targeted Tier 1 Chinese and international companies that are both commercial and technical industry leaders in the global graphite market. Through the Consultancy Agreement with Australia Minerals & Resources ("**AustMin**") (ASX Release - 1 May 2019), BlackEarth has established good business relationships with these global graphite players and has received highly positive feedback from testing, thereby accelerating offtake partnership discussions.

BlackEarth recently received feedback from the world's largest producer of expandable graphite products (the "**Producer**") reporting that excellent expansion rates and quality were achieved from testing on BlackEarth's coarse flake graphite samples. This feedback provides further validation that BlackEarth's graphite is suitable for sale as a high value product to the rapidly growing expandable graphite market.

**Table 1: Expansion Results Achieved from BEM graphite sample**

<b>BEM Sample</b>	<b>% Expansion</b>
+50 mesh (300 micron)	500-600%
+80 mesh (180 micron)	400-500%
+100 mesh (150 micron)	300-400%

Further to this, the Producer also reported that impurity content such as mica in BlackEarth's natural graphite concentrate was significantly lower when compared to other natural graphite concentrate imported from overseas suppliers, and will be further reduced following some additional process optimization work.

The Producer also confirmed that BEM's coarse flake graphite is highly suitable for, and meet all quality specifications, for expandable graphite production, in addition to raw material to produce superior quality fire retardants, high quality graphite foil and sealing materials, all of which are highly lucrative markets.

The Producer has agreed to work with BEM to ensure its ability to consistently meet high end specifications requirements on a long term basis. The price difference between fine graphite concentrate and high value expandable graphite can be in excess of US\$1000/t, hence this feedback and support from a world leader in the global graphite market is further validation of the financial viability of the Maniry graphite project.



**Image 1 – BlackEarth's expandable graphite product**

One of the world's leaders in refractories has also confirmed that the BEM sample received and tested meets all quality specifications and requirements for high-quality refractory products. Furthermore, the company has also demonstrated strong interest in BlackEarth's coarse flakes and has requested that the BEM produce special "tailor-made" natural graphite concentrate product to be used as raw material for the producer's premium / high value quality refractories.

Further testing continues on BEM's fine product (-100 mesh and 95%C) by both a world leading anode producer and the Beijing General Research Institute of Mining and Metallurgy ("BGRIMM") (ASX Release – 1 October 2019). BlackEarth's main focus is to further upgrade densities and particle size distribution to enable it to maximise production yield and energy density for the lithium-ion battery anode materials market. This work is being undertaken in parallel with works currently being undertaken at Dorfner ANZAPLAN in Germany with further results expected shortly.

Excellent technical results have been achieved in recent BGRIMM's beneficiation test works on BlackEarth's Maniry natural graphite ore. >95% fixed carbon has achieved on all grain size of Maniry concentrate, and the yield of +150 microns has achieved nearly 50% as part of the Stage 1 test program being carried out in Beijing. These results not only demonstrate the high quality of the Maniry ore, but also the superior beneficiation properties of the ore compared with other natural graphite projects in Africa, for which difficulties often occur in either reaching 95% fixed carbon content or results in a lower yield on coarse flake, with excess fine flake graphite.

A comprehensive process mineralogy study at BGRIMM was recently initiated to further understand the mineralogy and properties of Maniry natural graphite ore, and to support the optimisation on the existing beneficiation flow sheet as well as to produce more quality concentrate for further offtake discussions. The Company continues to work together with BGRIMM and AustMin in providing technical and commercial marketing support to potential customers and end-users. The stage 1 (250kg) test program is continuing at BGRIMM and is expected to be completed in January 2020 ahead of the large scale pilot program expected to commence soon thereafter.

BlackEarth looks forward to continuing to fast track the Maniry graphite project over the coming month and into 2020.

## **CONTACTS**

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

### **Competent Persons Statement**

The information in this document relates to test work results that have been derived using samples from the Company's pilot program and is based on information reviewed by Mr David Pass, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Pass is an employee of BatteryLimits. Mr Pass has sufficient experience relevant to the mineralogy and type of deposit under consideration and the typical beneficiation thereof to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012 Edition). Mr Pass consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.

## About BlackEarth Minerals NL

BlackEarth Minerals NL (ASX:BEM) is an ASX listed company focussed primarily on the development of its 100% owned Madagascan Maniry and Ianapera graphite projects. For more information, visit <https://www.blackearthminerals.com.au/>.



<b>Project Life</b>	10 Years
<b>NPV @ 10% pre-tax</b>	US\$ 103M
<b>IRR pre-tax</b>	42%
<b>Project CAPEX Stage 1</b>	US\$ 41M (500ktpa ore)
<b>Project CAPEX Stage 2</b>	US\$ 29M (1Mtpa ore)
<b>Payback for Stages 1 &amp; 2</b>	3.7 years (Stage 1 - Only 2.7 years)
<b>Annual graphite production</b>	Av 30ktpa (Stage 1 – Years 1-3) Av 60ktpa (Stage 2 – Years 4+)

Project	Deposit	Tonnes (Mt)	TGC Grade (%)	Contained Tonnes (t)
Razafy	Indicated	8	7.22	677,600
	Inferred	3.2	6.8	217,600
	<b>Razafy -Total</b>	<b>11.2</b>	<b>7.1</b>	<b>795,200</b>
Maniry	Haja - Inferred	9	5.79	521,100
	<b>Haja Total</b>	<b>9</b>	<b>5.79</b>	<b>521,100</b>
<b>Total Resources</b>		<b>20.2</b>	<b>6.51</b>	<b>1,316,300</b>

Above: Maniry Graphite Project Scoping Study Results  
Left: Location of BEM's Maniry & Ianapera graphite projects

The Razafy Resources (both indicated and inferred) are reported at 6% TGC with cut off constraining wireframe solids defined at a nominal 3% cut off grade.

The Haja Resource is reported at 5% TGC cut off with cut off constraining wireframe solids defined at a nominal 1.5% cut off grade.

The indicated mineral resource at Razafy was first reported in the announcement of 14 August 2018 entitled "Update – Maiden Resource Estimation for Razafy at Maniry Project".

The inferred mineral resource at Razafy was first reported in the announcement of 14 August 2018 entitled "Update – Maiden Resource Estimation for Razafy at Maniry Project".

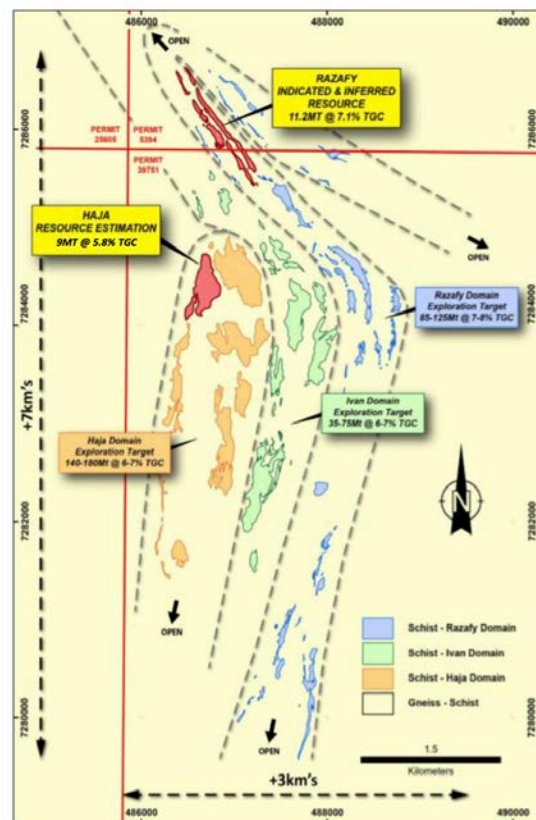
The inferred mineral resource at Haja was first reported in the announcement of 27 December 2018 entitled "Maiden Resource Estimation for Haja at Maniry Graphite Project".

There is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realised.

The potential quantity and grade of an exploration target is conceptual in nature, there has been insufficient exploration to determine a mineral resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realised.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement in respect of the scoping study results (see the announcement of 30 January 2019 entitled "BlackEarth announces positive Scoping Study results for the Maniry Graphite Project") and that all material assumptions and technical parameters underpinning the estimates of forecast financial information continue to apply and have not materially changed.

Additionally, the Company confirms that it is not aware of any new information or data that materially affects the information regarding the indicated mineral resource at Razafy in the announcement of 14 August 2018 entitled "Update – Maiden Resource Estimation for Razafy at Maniry Project", which forms the basis of the production targets outlined in the table above.



**Maniry Graphite Project – Overview**

For further information regarding the Maniry exploration target, please refer to the announcement entitled "Exploration Target Update" dated 14 August 2018 "Update Maniry Exploration Target".