

**ASX Announcement****Maiden Resource Estimation for Haja at Maniry Graphite Project**

- Maiden JORC compliant inferred resource for Haja of 9Mt @ 5.79% TGC at the Maniry Project in Southern Madagascar
- The Haja deposit is located 800m from the Razafy resource of 11.2Mt @ 7.10% TGC announced on 14 August 2018
- BlackEarth continues exploration at Maniry and has now completed a trenching programme on Razafy strike extension and adjacent graphitic lenses
- Razafy Scoping Study due for completion January 2019

BlackEarth Minerals NL (ASX: BEM) (the **Company** or **BlackEarth**) is pleased to announce it is consolidating its strategy to fast-track the development of its 100% owned Maniry Graphite Project in Southern Madagascar with the completion of a maiden JORC compliant Mineral Resource Estimation (MRE) for the Haja graphite deposit, adjacent to the Razafy resource.

The Haja inferred resource, comprises **9Mt @ 5.79% Total Graphitic Carbon (TGC)** at a 5% TGC cut-off grade. The Haja resource report for several TGC cut-off grades is summarised in Table 1.

| <b>Cut-off Grade<br/>TGC</b> | <b>Tonnage<br/>(Mt)</b> | <b>Total Graphitic<br/>Carbon<br/>Grade (%)</b> | <b>Contained Graphite<br/>(t)</b> |
|------------------------------|-------------------------|-------------------------------------------------|-----------------------------------|
| <b>6.0%</b>                  | 2.5                     | 6.68                                            | 167,000                           |
| <b>5.5%</b>                  | 5.2                     | 6.18                                            | 321,400                           |
| <b>5.0%</b>                  | <b>9.0</b>              | <b>5.79</b>                                     | <b>521,100</b>                    |

*Note: The Mineral Resource was estimated within constraining wireframe solids defined at a nominal 1.5% TGC cut-off grade*

**Table 1 – Haja Mineral Resource Estimate**

This Haja Mineral Resource Estimate consolidates the Company's Maniry Project resource base, adding a substantial resource to the adjacent high grade Razafy Graphite deposit. The Haja deposit is located 800m to the west of Razafy in a highly prospective area (Figure 1).

As planned, BlackEarth finished its trenching programme in early December 2018 at the Maniry Project, which focussed on strike extensions for Razafy and uncovering prospective high-grade lenses in its vicinity.

**The Maniry Scoping Study based on the Razafy deposit is scheduled for completion in January 2019.**

Further information about the Razafy resource, exploration potential, and BlackEarth's on-going activities on the Maniry Graphite Project can be found in the ASX announcements dated 14, 21 & 23 August, 13 September, 3, 9 & 16 October, 21 November and 12 December 2018.

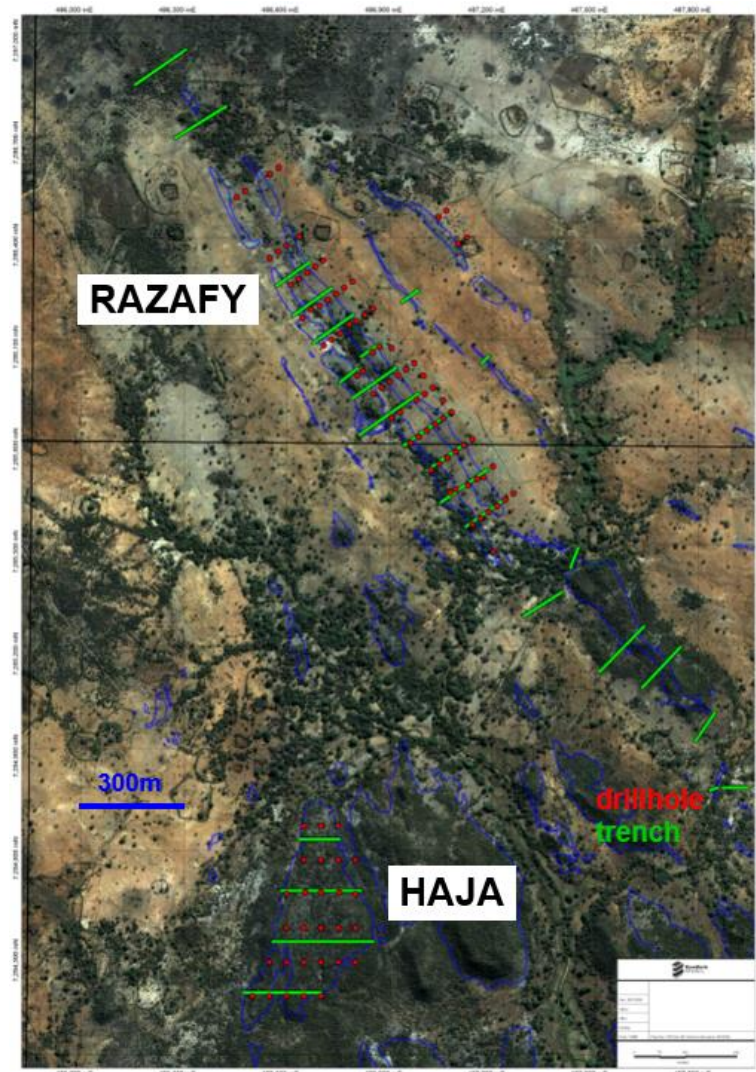


Figure 1 – Haja & Razafy Deposits - Drillhole & Trench Location Map

### Key Points on the Haja Resource Estimation

- The December 2018 Mineral Resource Estimate for the Haja graphite deposit reports a total of 9.0Mt @ 5.79% TGC for 521,100 tonnes of contained graphite at a 5% TGC cut-off grade
- The graphitic mineralisation is currently open down dip

- The resource is based on 897 samples averaging 1.9m in length from 28 diamond drillholes. Of this drilling database, 25 drillholes were drilled by BlackEarth in 2018
- The 28 drillholes are positioned on a 100m north-south by 50m east-west grid over six sections
- The contact between the graphitic schist and background un-mineralised gneiss is sharp and the contact can be easily followed from section to section
- The modelled mineralised zones that form the basis of the resource show good continuity
- The resource has been estimated by ordinary kriging within constrained mineralised envelopes defined at a nominal 1.5% TGC cut-off grade
- The reported resource was limited to 70m downdip from the last drillhole on each section
- The tonnages in the resource model are calculated using 56 density measurements which cover the depth and extent of the deposit. The average density for the resource reported is 2.20m/t<sup>3</sup>

The JORC 2012 Table 1 is provided in Appendix A.

### **Preliminary Testwork Results on Haja Core Samples**

Preliminary metallurgical testwork was completed in December 2018 by ALS Global Laboratory (Perth, WA) on a 25kg core sample taken from diamond drillholes MND0093, MND0094 and MND0095 drilled by BlackEarth in 2018.

Three composites - composite 93,94 and 95 - were prepared from the core of the three drillholes. The head assays for the composites are presented in Table 2.

The testwork included iterative stages of crushing, flotation and regrind. The graphite flake size distribution and grades obtained for the testwork are summarised in Table 3. The testwork results show that:

- All three composites report approximately a 30% proportion in weight to the small flake size fraction
- Concentrate grades range from 93.6% to 95.6% TGC
- The most weathered composite material - Composite 93- produces mostly small to fine flakes, 32% and 46% respectively in weight percentage for these size fractions
- Composites 94 and 95, which comprise less weathered material than Composite 93, show a different flake size distribution, with an increase in large flakes - 26% and 19% respectively in weight percentage for the large flake size fraction-

| <b>Composite</b> | <b>Total Graphitic Carbon (%)</b> | <b>Sulphur (%)</b> | <b>SiO2 (%)</b> |
|------------------|-----------------------------------|--------------------|-----------------|
| Composite 93     | 8.07                              | 0.64               | 61.6            |
| Composite 94     | 10.0                              | 1.64               | 60.0            |
| Composite 95     | 9.96                              | 1.76               | 60.8            |

*Note: Total graphitic carbon grades determined by the Nc425 LOI method from ALS Global Laboratory, Perth*

**Table 2 – Haja Testwork Composite Head Grades**

| Flake Size Category   | Particle Size Microns (µm) | Composite 93           |                            | Composite 94           |                            | Composite 95           |                            |
|-----------------------|----------------------------|------------------------|----------------------------|------------------------|----------------------------|------------------------|----------------------------|
|                       |                            | Distribution (weight%) | Graphitic Carbon Grade (%) | Distribution (weight%) | Graphitic Carbon Grade (%) | Distribution (weight%) | Graphitic Carbon Grade (%) |
| <b>Jumbo</b>          | ≥ 300                      | 2.5                    | 97.6                       | 11.4                   | 98.4                       | 7.2                    | 98.2                       |
| <b>Large</b>          | 180 to 300                 | 12.7                   | 97.9                       | 26.5                   | 97.3                       | 19.3                   | 97.2                       |
| <b>Medium</b>         | 150 to 180                 | 7.3                    | 97.6                       | 10.0                   | 96.6                       | 8.8                    | 96.4                       |
| <b>Small</b>          | 75 to 150                  | 31.9                   | 97.2                       | 29.8                   | 96.1                       | 32.0                   | 95.1                       |
| <b>Fine</b>           | <75                        | 45.5                   | 89.6                       | 22.3                   | 91.0                       | 32.6                   | 88.2                       |
| <b>All Categories</b> |                            | 100.0                  | <b>93.9</b>                | 100.0                  | <b>95.6</b>                | 100.0                  | <b>93.6</b>                |

Note: Total graphitic carbon grades determined by the Nc425 LOI method from ALS Global Laboratory, Perth

**Table 3 – Haja Graphite Flake Size Distribution & Grade**

## Summary of Haja Mineral Resource Estimate

### a. Geology and Geological Interpretation

The project overlies a prominent 20km wide zone consisting of a folded assemblage of graphite and quartz-feldspar schists, quartzite and marble units, with lesser intercalated amphibolite and leucogneiss. This zone, termed the Ampanihy Belt is a core component of a Neoproterozoic Graphite System. The belt is interpreted as a ductile shear zone composed of rocks of volcanic and sedimentary origins.

The Haja deposit is part of a series of graphitic lenses forming the Maniry Project. The deposit consists of a main higher-grade north-south striking lens with two adjacent top and bottom lower grade lenses which often coalesce, forming a +100m thick lens. The lenses are dipping shallowly to the east at 25°.

As per mineralogical examinations (ASX announcement 15 February and 5 July 2018) core logging and preliminary testwork results, the graphite mineralisation at Haja consists of crystalline graphite with flake dimensions which can exceed 300 microns.

### b. Drilling Techniques

All drilling at Haja was undertaken using a diamond drilling rig. Core sizes are HQ or NQ. Three drillholes were completed by Malagasy Minerals, the previous owner, while BlackEarth drilled the 25 remaining drillholes in 2018.

### c. Sampling Techniques and Logging

All HQ and NQ core was cut using a core saw into quarter core and sampled. Sample sizes were typically 2m in length. In total, 1076 samples have been taken across the Haja deposit. A suitably qualified geologist oversaw all logging and sampling on site.

#### d. Assaying

Samples were assayed at Intertek Genalysis (Perth). The method used was total graphite and sulphur by CS Analyser. This method is considered a standard technique for the analysis of total graphitic carbon.

### Resource Estimate Input Data & Methodology

#### e. Database

- The Razafy drillhole database includes 28 diamond drillholes (up to drillhole MNDD107)
- The deposit is drilled on six 100m spaced section lines with 50m drill spacing on sections
- A set of four trenches is available and confirm at surface the outlines of the mineralisation. Note that the trench data is not used in the Mineral Resource Estimate
- The database contains 1076 assayed samples for a total meterage of 2000m of assayed material, of which 1667m are included in the estimated graphitic lenses
- Fifty-six density measurements made by the calliper method on site on freshly drilled core are available for the deposit. They cover the vertical depth of the profile and extent of the deposit

Figure 2 presents the drillhole and trench location for the Haja deposit.

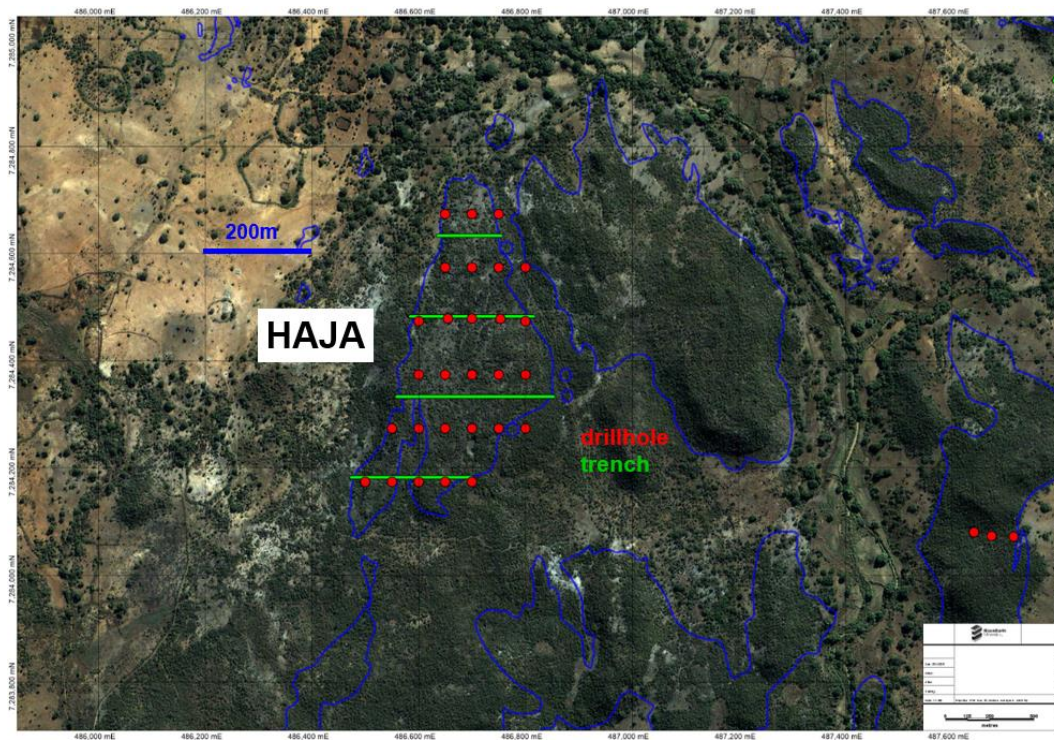


Figure 2 – Haja Drillhole & Trench Location Map

#### **f. Topography & Collar Surveys**

Topography and collar survey data for the MRE is based on measurements taken on GPS handheld devices.

#### **g. Grade Envelopes**

- The contact between the graphitic gneiss and the background rock is sharp in TGC grade and the boundaries of the lenses are easy to define on sections
- There is a sharp TGC grade break between the graphitic schists and the background material which usually presents TGC grades below 0.1%
- A nominal 1.5% TGC cut-off grade is used to define the mineralised envelopes by sectional interpretation and create three-dimensional solid wireframes

#### **h. Oxidation Zones**

- The sulphur content has been used to define oxide, transition and fresh zones for the deposit.
- The sulphur grade changes between these three oxidation zones are sharp

#### **i. Statistics & Variography**

- The assay data was composited to 2m within the mineralised envelopes
- The statistical analysis and analysis of the spatial continuity (variography) of the mineralisation were completed on the 2m composites for TGC and sulphur within the mineralised lenses
- The directional variograms were modelled with long ranges along strike (north-south), down dip (N90, 25°) and across dip of 350mx145mx33m for TGC, and 200mx125mx24m for sulphur

#### **j. Block Model**

- A block model with blocks of 25 m along strike, 10 m across strike and 5 m vertically was used to estimate the resource within the mineralised envelopes
- The block model extends 725m north-south, 550m east-west and 210m in depth

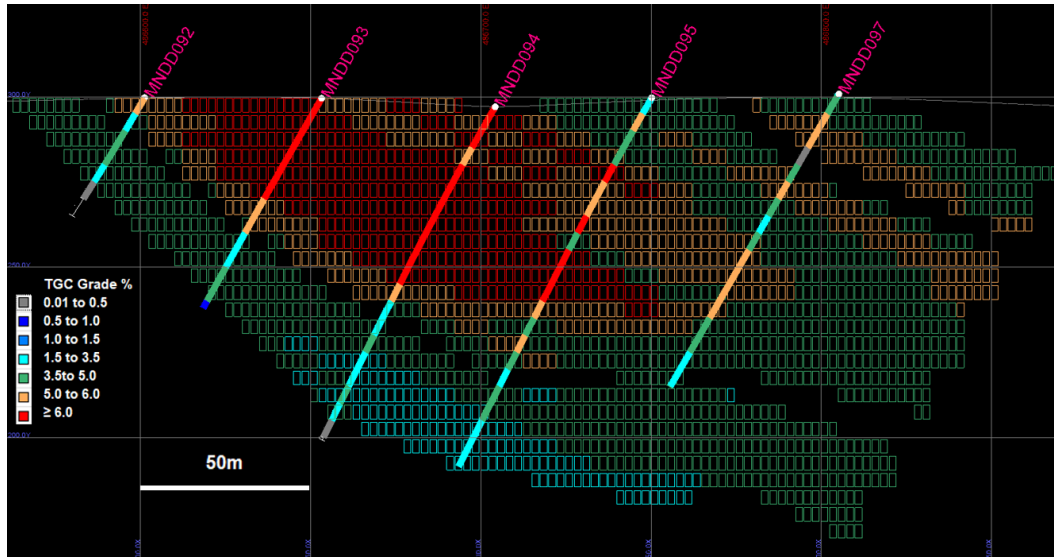
#### **k. Grade Estimation**

- TGC was estimated by ordinary kriging within the grade envelopes. The oxide, transition and fresh TGC samples were combined to estimate TGC grades inside the envelopes
- Sulphur was estimated by ordinary kriging using the oxide, transition and fresh zones as distinct zones with sulphur grades being estimated using only the data pertaining to the respective oxidation zones
- No top-cut measure was used for the sulphur estimation. For the TGC estimation, reduced search ellipses of 70mx70mx6m were used for grades above 6.5% TGC when estimating blocks as the +6.5% TGC grades corresponds to a separate population in the data statistical distribution
- The search ellipse dimensions were chosen in accordance to the ranges defined by the variography as noted previously



- TGC was estimated using a single pass. Sulphur grades are not available for the 3 Malagasy Minerals drilled holes, so it was necessary to complete a second estimation pass to fully inform blocks with sulphur grades when they could not be interpolated in the first run.

Figure 3 illustrates the TGC model on section 7,284,380N



*Note: the model presented is the regularised model on 5mx2.5mx5m blocks from the original kriged model*

**Figure 3 – Haja Resource Block Model – Section 7,284,380N**

## I. Validation

TGC and sulphur grade estimates have been validated statistically and visually. The grade estimates for both elements honour the input data characteristics.

## m. Density Assignment & Tonnage Calculation

The tonnages in the resource model are calculated using 56 density measurements which cover the depth and extent of the deposit and have been averaged on 20m vertical slices, from 2.05 m/t<sup>3</sup> in the weathered material to a maximum of 2.69 m/t<sup>3</sup> at the lowest depth. The average density of the resource reported is 2.20m/t<sup>3</sup>

## n. Classification & JORC CODE 2012 Clause 49

Clause 49 of the JORC Code 2012 requires that industrial minerals such as graphite that are produced and sold according to product specifications are reported “in terms of the mineral or minerals on which the project is to be based and must include the specification of those minerals”. Hence, graphite Mineral Resources must be reported at least in terms of purity and flake size distribution, in addition to TGC and tonnages.

A mineralogical and petrological analysis completed by Townend Mineralogy Laboratory (refer ASX releases 15 February and 5 July 2018) on two thin sections for Haja indicates the presence of +300 microns graphite flakes (Figure 4). These results are corroborated by the preliminary metallurgical testwork completed in December 2018 by ALS Global Laboratory (Perth, WA) reported in the previous

pages. The preliminary testwork provides metallurgical characteristics of the graphitic material in terms of flake size and distribution as well as concentrate grade achievable by a standard flotation process.

In accordance with the considerations on likely product specifications and marketability, and given the current drillhole spacing and the measured spatial continuity of the TGC grades obtained by the variography, the information currently available for the Haja deposit supports a Mineral Resource Estimate classified in the Inferred category.



from Townend Mineralogy Laboratory Report (ASX release 15 February 2018)

**Figure 4 – Haja Polished Thin Section**

#### **o. Resource Report**

The model reported within the mineralised envelopes using a maximum downdip limit of 70m past the last drillholes being used to krig the resource totals 9.0Mt @ 5.79% TGC at a 5% TGC cut-off grade.

The resource report is summarised in Table 1 for several TGC cut-off grades.

#### **Managing Director, Tom Revy commented:**

“Following the IPO in January this year, we have delivered the maiden resource within seven months of listing. This resource has delivered a high grade of graphite with favourable mineralogy. I look forward to growing the resource and commencement of our next major deliverable: the scoping study.”

BlackEarth Minerals NL 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/>



BlackEarth Minerals will be holding a special online investor briefing on January 15 to present the Scoping Study results and plans for 2019. Investors are invited to attend the online briefing and can register at: <http://www.blackearthminerals.com.au/webinar>

## **CONTACTS**

|             |                              |                             |
|-------------|------------------------------|-----------------------------|
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| Jane Morgan | Investor and Media Relations | 0405 555 618                |

## ***Competent Person's Statement***

The information contained in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr. Peter Langworthy, a member of The Australasian Institute of Mining and Metallurgy. Mr. Langworthy is an employee of OmniGeoX Pty Ltd which is a consultant to BlackEarth. Mr. Langworthy has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves." Mr. Langworthy consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

The information contained in this report that relates to Mineral Resources is based on information compiled by Ms. Annick Manfrino, Principal of Sigma Blue and Manager Geology of Black Earth Minerals. Ms. Manfrino is a member of The Australian Institute of Geoscientists and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activities undertaken to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves." Ms. Manfrino completed a site inspection and is the Competent Person for the resource estimation. Ms. Manfrino consents to the inclusion in this report of the matters based on her information in the form and context in which it appears.

For more information – [www.blackearthminerals.com.au](http://www.blackearthminerals.com.au)

## About BlackEarth Minerals NL ( [www.blackearthminerals.com.au](http://www.blackearthminerals.com.au) )

BlackEarth Minerals NL (ASX: BEM) is an ASX listed company focused primarily on the exploration and development of its 100% owned Madagascan graphite projects.



The location of the Company's primary graphite projects: Madagascar (Maniry & Ianapera - above)

The Company's Madagascan projects consist of two primary exploration areas: the Maniry Project (**Maniry**) in the south, and the Ianapera Project (**Ianapera**) in the north. Maniry is highly prospective for large-scale, high-quality graphite deposits and is currently at an advanced evaluation stage. The Razafy indicated and inferred resource, comprising of **11.2Mt @ 7.10% Total Graphitic Carbon (TGC)** is summarised in Table below. The vast majority of the resource has been classified with a high degree of confidence at an 'Indicated' classification, with the remainder classified as 'Inferred'. The Mineral Resource is reported at a 6% TGC cut-off grade.

The higher confidence classification of the majority of the resource was supported by detailed petrological assessments (ASX Announcements dated 16 February 2018 and 5 July 2018) and has now been fully validated through this current program of metallurgical test work. The Mineral Resource was estimated within constraining wireframe solids defined at a nominal 3% TGC cut-off grade.

| Classification         | Tonnes (Mt) | TGC Grade (%) | Contained Tonnes (t) |
|------------------------|-------------|---------------|----------------------|
| Razafy Indicated       | 8.0         | 7.22          | 577,600              |
| Razafy Inferred        | 3.2         | 6.80          | 217,600              |
| <b>Total Resources</b> | <b>11.2</b> | <b>7.10</b>   | <b>795,200</b>       |

### Mineral Resource Estimates for Maniry Project

Results, from recent diamond drilling have confirmed that the Razafy Prospect (contained within the Maniry Project area) consists of high grade, thick outcropping graphitic mineralisation contained within distinct lenses which remain not only open along strike but also at depth. Recent identification of further lenses to the east also highlights the prospectivity of the immediate area which, based on mapping and previous exploration represents only 5% of the current Maniry Project area.

Ianapera is located approximately 50km north of Maniry. It consists of a series of high-grade outcrops, up to 800m long and 30m wide, of graphite mineralisation within a broader graphite trend. Identified as a large conductive body, potential exists for the presence of a large graphitic mineralised system.



## Appendix I

### JORC Code, 2012 Edition – JORC Table 1

#### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

| Criteria                                              | Commentary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Sampling techniques</i>                            | <ul style="list-style-type: none"> <li>The drillhole database consists only of diamond drillholes</li> <li>Sampling consists of 2m composite samples of quarter core with breaks at lithological discontinuities - typical 3-5kg</li> <li>Samples are cut using a diamond blade core saw</li> <li>Duplicate samples are collected every 20th sample for QAQC purposes. CRM's are inserted every 20th Sample for QAQC purposes</li> <li>Sampling is considered to be comprehensive and representative</li> <li>1/4 cores are sent for analysis, the remaining core material is retained and stored in BlackEarth secure coreshed</li> </ul> |
| <i>Drilling techniques</i>                            | <ul style="list-style-type: none"> <li>Diamond drilling</li> <li>Core size is HQ and NQ typically in 0.5-1.5m runs. Core from a select number of holes are orientated.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <i>Drill sample recovery</i>                          | <ul style="list-style-type: none"> <li>Core recovery is routinely recorded every metre by trained geologists</li> <li>No bias or relationship has been observed between recovery and grade</li> <li>Recovery is typically +80% within weathered rock, and +95% in fresh rock in nearly all instances.</li> </ul>                                                                                                                                                                                                                                                                                                                           |
| <i>Logging</i>                                        | <ul style="list-style-type: none"> <li>All holes are logged by qualified and experienced geologists</li> <li>All logging included descriptions of geotechnical, mineralisation, structural and lithological aspects of the core and was digitally recorded using an industry standard code system</li> <li>Core is systematically photographed</li> <li>Data collected offers sufficient detail for the purpose of interpretation and further studies</li> </ul>                                                                                                                                                                           |
| <i>Sub-sampling techniques and sample preparation</i> | <ul style="list-style-type: none"> <li>1/4 cores are cut using a diamond core saw and collected for assay</li> <li>2-meter composite sampling is deemed to be comprehensive and representative for the style/type/thickness of mineralisation under investigation</li> <li>Duplicate samples are taken (remaining quarter core) every 20th sample for QAQC purposes</li> </ul>                                                                                                                                                                                                                                                             |
| <i>Quality of assay data and laboratory tests</i>     | <ul style="list-style-type: none"> <li>Assaying is undertaken by Intertek Genalysis in Perth (Aus)</li> <li>Samples are pulverised to 75 microns, roasted to 420°C and digested with a weak acid. Final analysis is undertaken by CS analyser (Code: C73/CSA)</li> <li>Standards and duplicates are inserted every 20th sample by the BEM technical team in addition to the internal QAQC from the laboratory. No issues were observed with QAQC.</li> </ul>                                                                                                                                                                               |
| <i>Verification of sampling and assaying</i>          | <ul style="list-style-type: none"> <li>Significant intersections have been verified by alternative company personnel</li> <li>No twin holes have been undertaken</li> <li>All data is recorded digitally using a standard logging system and files are stored in an industry standard database</li> </ul>                                                                                                                                                                                                                                                                                                                                  |
| <i>Location of data points</i>                        | Topography and collar survey data for the MRE is based on measurements taken on GPS handheld devices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>Data spacing and distribution</i>                  | <ul style="list-style-type: none"> <li>The drillhole grid spacing is 100m north-south (orebody strike) by 50m east-west</li> <li>The drillhole spacing allowed to follow the graphitic mineralisation outlines from section to section and down dip</li> <li>Samples have been composited to 2m length within the mineralised lenses</li> </ul>                                                                                                                                                                                                                                                                                            |

| Criteria                                                       | Commentary                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                | interpreted to complete the statistical analysis, variography and estimation                                                                                                                                                                                                                                                                                                      |
| <i>Orientation of data in relation to geological structure</i> | <ul style="list-style-type: none"> <li>The drilling grid matches the strike of the orebody</li> <li>The orientation of the drilling at N90°-60° is not expected to introduce sampling bias as drillholes intersect the mineralisation at a sufficient angle to the dip of the orebody, in addition, the mineralisation envelopes are interpreted in three-dimensions</li> </ul>   |
| <i>Sample security</i>                                         | <ul style="list-style-type: none"> <li>Samples are cut and sampled on site before being transported to the company sample preparation facility in Antananarivo</li> <li>Sample pulps are freighted by plane to Intertek Genalysis in Perth (Aus) for assay</li> <li>the remaining core samples are kept in a secure facility adjacent to BEM's offices in Antananarivo</li> </ul> |
| <i>Audits or reviews</i>                                       | Sampling procedures has been reviewed by an external auditors OMNI GeoX Pty. Ltd, with site visits at the beginning of the programme                                                                                                                                                                                                                                              |

### Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

| Criteria                         | Commentary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Database integrity</i>        | <ul style="list-style-type: none"> <li>The drillhole database has been loaded in an industry standard database</li> <li>Validation for duplicates, missing data, outliers, erroneous intervals is completed before proceeding to the interpretation and analysis</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Site visits</i>               | <ul style="list-style-type: none"> <li>Annick Manfrino, Competent Person for the resource estimate visited the site during the drilling programme in March-April 2018</li> <li>Drilling, sampling and sample preparation procedures were reviewed and are considered of industry standard</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <i>Geological interpretation</i> | <ul style="list-style-type: none"> <li>The confidence in the geological interpretation of the graphitic lenses at Haja is considered robust for the purpose of estimating and reporting a resource of the Inferred category</li> <li>Graphite mineralisation hosted within graphitic schists and gneiss, visibly recognizable from the background rock</li> <li>The complete extent of the Haja lenses outcrop and can be followed by surface mapping</li> <li>Trenches have been used with success in early exploration stages to confirm the strike continuity</li> <li>No major faulting or other structural disruption has been mapped in the deposit area and the location of the drilling intercepts of the graphitic mineralisation confirms the position of the lenses anticipated from the outcrop sampled by the trenches</li> <li>The boundary between graphitic schists and gneiss and the surrounding material is usually sharp with TGC grades below 0.5% TGC in the background material changing to +1.5% TGC grades in the graphitic lenses, leaving few options to shift the boundaries position when interpreting the mineralised body</li> <li>Mineralisation envelopes were interpreted at a nominal +1.5% TGC cut-off grade</li> <li>The Haja orebody is composed of three adjacent parallel lenses dipping 25° to the east which often coalesce into a single body</li> <li>Logged graphitic rich zones correspond extremely well with TGC assay results</li> <li>No alternative interpretation has been considered at present</li> <li>The base of the weathered horizons- oxide &amp; transition- can be interpreted from the sulphur grades sharp changes</li> </ul> |

| Criteria                                    | Commentary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Dimensions</i>                           | <ul style="list-style-type: none"> <li>The resource model is based on six fences of drillholes 100m apart with drillholes separated by 50m on section</li> <li>The Haja resource model cover the volume occupied by the Haja orebody and extents 725m north-south, 550m east-west and 210m at depth</li> <li>The solids interpreting the Haja graphitic orebody extents 630m north-south, 500m east-west and 1703m vertically</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <i>Estimation and modelling techniques</i>  | <ul style="list-style-type: none"> <li>TGC and sulphur have been estimated by ordinary kriging using Geovia GEMS software</li> <li>Mineralised envelopes were used as hard boundaries for the TGC during the interpolation</li> <li>Oxidation zones were used as hard boundaries for the interpolation of sulphur</li> <li>No top-cut was used for TGC but the influence of grades above 6.5% TGC was limited to 70mx70mx6m during interpolation. The 6.5% TGC grade corresponds to a statistical change in the data distribution. The maximum TGC value reported in the grade envelopes is 11.45%</li> <li>No top-cut measure was used for Sulphur</li> <li>The grade estimates -TGC &amp; Sulphur- were validated visually and statistically and honour spatially and statistically the input data</li> <li>No previous estimate exists for this deposit</li> <li>No depletion of the Mineral resource was required as no mining has occurred historically in the area</li> </ul> |
| <i>Moisture</i>                             | The resource is reported on a dry tonnage basis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>Cut-off parameters</i>                   | <ul style="list-style-type: none"> <li>A reporting TGC cut-off grade of 5% TGC was used to report the Mineral Resource and is in line with other reported Mineral Resources in East Africa</li> <li>No mining studies have been carried out to date on the project and cut-off grade calculations are not available</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>Mining factors or assumptions</i>        | <ul style="list-style-type: none"> <li>Based on the orientation, thickness and depth to which the graphitic lenses have been modelled and their estimated TGC, the potential mining method is considered to be open pit mining</li> <li>No assumptions have been made to date regarding minimum mining widths or dilution</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <i>Metallurgical factors or assumptions</i> | <ul style="list-style-type: none"> <li>In accordance with Clause 49 of the JORC code (2012), the product specifications and general product marketability were considered to support the Mineral Resource Estimate for Industrial Minerals</li> <li>Independent preliminary flotation testwork completed by ALS Global Laboratory (Perth,WA) on three composites are reported in this announcement and shows that: <ul style="list-style-type: none"> <li>15% to 37% in overall weight of concentrate is of large or greater flake size category (+ 180 micron) at a concentrate grade above 97% TGC</li> <li>overall concentrate grades range from 93.6% to 95.6% TGC</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                       |
| <i>Environmental factors or assumptions</i> | <p>It is assumed that the processing of ore will have minimal environmental impact.</p> <p>This is based upon other graphite processing operations and basic assumptions on how graphite ore will be processed at Maniry</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>Bulk density</i>                         | The bulk density data used to report the resource comprises 56 measurements made by the calliper method on competent fresh core drilled during BEM's 2018 drilling campaign which cover the depth and extent of the deposit and have been averaged in 20m vertical slices, from 2.05 m/t <sup>3</sup> in the weathered material to a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



| Criteria                                           | Commentary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                    | maximum of 2.69 m/t <sup>3</sup> at the lowest depth. The average density of the resource reported is 2.20m/t <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>Classification</i>                              | <ul style="list-style-type: none"> <li>• Classification of the Mineral Resource Estimate reflects the view of the Competent Person when taking into account the geological understanding of the deposit, QAQC of the samples, density data and drillhole spacing in relation to the continuity of the mineralisation. Preliminary testwork results related to the flake size and distribution and sample purity supported the classification of the estimate as a Mineral Resource Estimate of the Inferred category</li> <li>• The Haja lenses are continuous over the length of the deposit drilled</li> <li>• The mineralisation can be followed at surface from mapping and with the trenches available. Graphitic mineralisation is easily visually distinguished from the surrounding background rock from its colour and the presence of visible graphitic flakes</li> <li>• The trenches completed during the early exploration stages, but not used in the resource estimate, confirm the location at surface of the thickness of the mineralisation estimated by the model</li> <li>• At either strike end of the deposit, extrapolation has been limited by the wireframed envelopes which were extended 50m from the first and last drillhole fences</li> <li>• Downdip, the mineralisation was extrapolated no more than 70m from the last drillhole intercepts on which the wireframes are based</li> <li>• All material inside the wireframe envelopes within the ranges detailed above has been classified as inferred material</li> </ul> |
| <i>Audits or reviews</i>                           | <ul style="list-style-type: none"> <li>• No audit nor review were undertaken for the Mineral Resource estimate</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <i>Discussion of relative accuracy/ confidence</i> | <ul style="list-style-type: none"> <li>• The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the resource as Inferred, as per the guidelines of the JORC Code 2012 edition</li> <li>• No other estimation method or geostatistical analysis has been performed</li> <li>• The Mineral Resource Estimate is a global estimate of tonnes and grades</li> <li>• Tonnages and grades above the nominated cut-off grades applied on TGC are provided in the body of the announcement</li> <li>• The contained graphite values were calculated by multiplying the TGC grades (%) by the estimated tonnage on a block by block basis</li> <li>• No production data is available to reconcile results with</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |