



ABN 63 111 306 533

## QUARTERLY REPORT TO SHAREHOLDERS

for the three months ended  
31 March 2013

### ASX Code - EME

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This report and further  
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Energy Metals' website at:

[www.energymetals.net](http://www.energymetals.net)



## HIGHLIGHTS

### EXPLORATION

#### Ngalia Project

Geophysical surveys continued over the extensions of the potentially mineralised stratigraphy under thin cover. Results have shown the survey successfully maps the prospective horizon.

#### Mopoke Well Project

A resource estimate of 9.75Mt at 165 ppm eU<sub>3</sub>O<sub>8</sub> for 1,613 tonnes or 3.56Mlb U<sub>3</sub>O<sub>8</sub> (at 100ppm cut-off) has been completed at the Mopoke Well Project (WA).

### URANIUM TRADING

Permit to possess nuclear material extended.

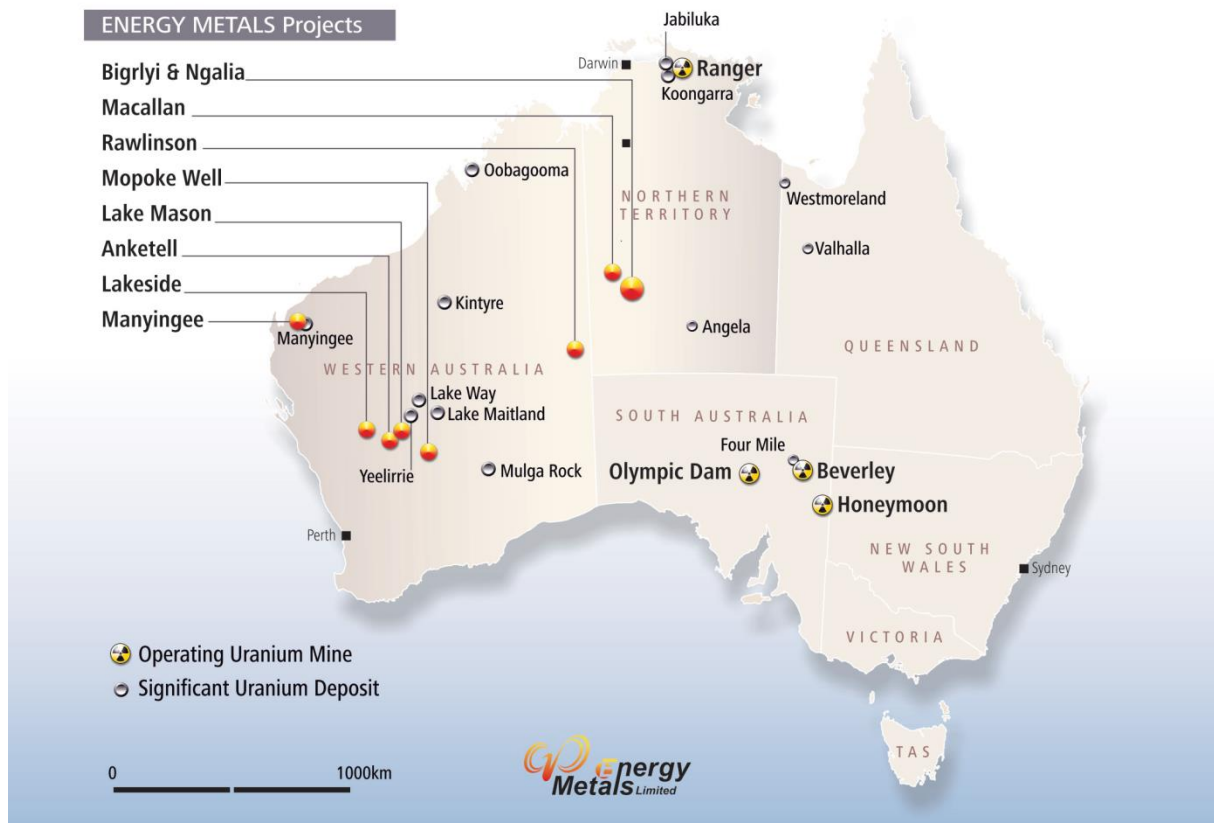
## CORPORATE

Energy Metals had approximately \$20.89M in cash and 153.8M shares on issue at 31 March 2013.

**Weidong Xiang**  
**Managing Director**  
**30 April 2013**

## INTRODUCTION

Energy Metals is a dedicated uranium company with nine exploration projects located in the Northern Territory (NT) and Western Australia covering over 4,000 km<sup>2</sup>. Most of the projects contain uranium mineralisation discovered by major companies in the 1970's, including the advanced Bigryli Project (NT).



*Figure 1 – Location of Energy Metals Projects*

Energy Metals is well placed to take advantage of the favourable outlook for uranium as nuclear power continues to play an increasing role in reducing global carbon emissions

Importantly Energy Metals is one of only five companies that currently hold all the required permits and authorities to export Uranium Oxide Concentrates (UOC) from Australia. The Company recently completed its first shipment of UOC and is currently negotiating purchase agreements with Australian uranium producers to enable further shipments from Australia for resale, primarily to major Chinese utility China Guangdong Nuclear Power Holding Company (CGNPC), ultimately Energy Metals' largest shareholder.

China Uranium Development Co. Limited, Energy Metals' largest shareholder (with 60.6% of issued capital), is a wholly owned subsidiary of CGNPC. As of 31 December 2012, CGNPC had six operating nuclear power stations with existing generation capacity of 6,120 MWe and with more than 17,750 MWe of capacity under construction in 16 separate power stations across various locations around China. Additionally CGNPC is one of only two companies authorised by the Chinese government to import and export uranium.

This unique relationship with CGNPC gives Energy Metals direct market exposure as well as access to significant capital and places the Company in a very strong position going forward.

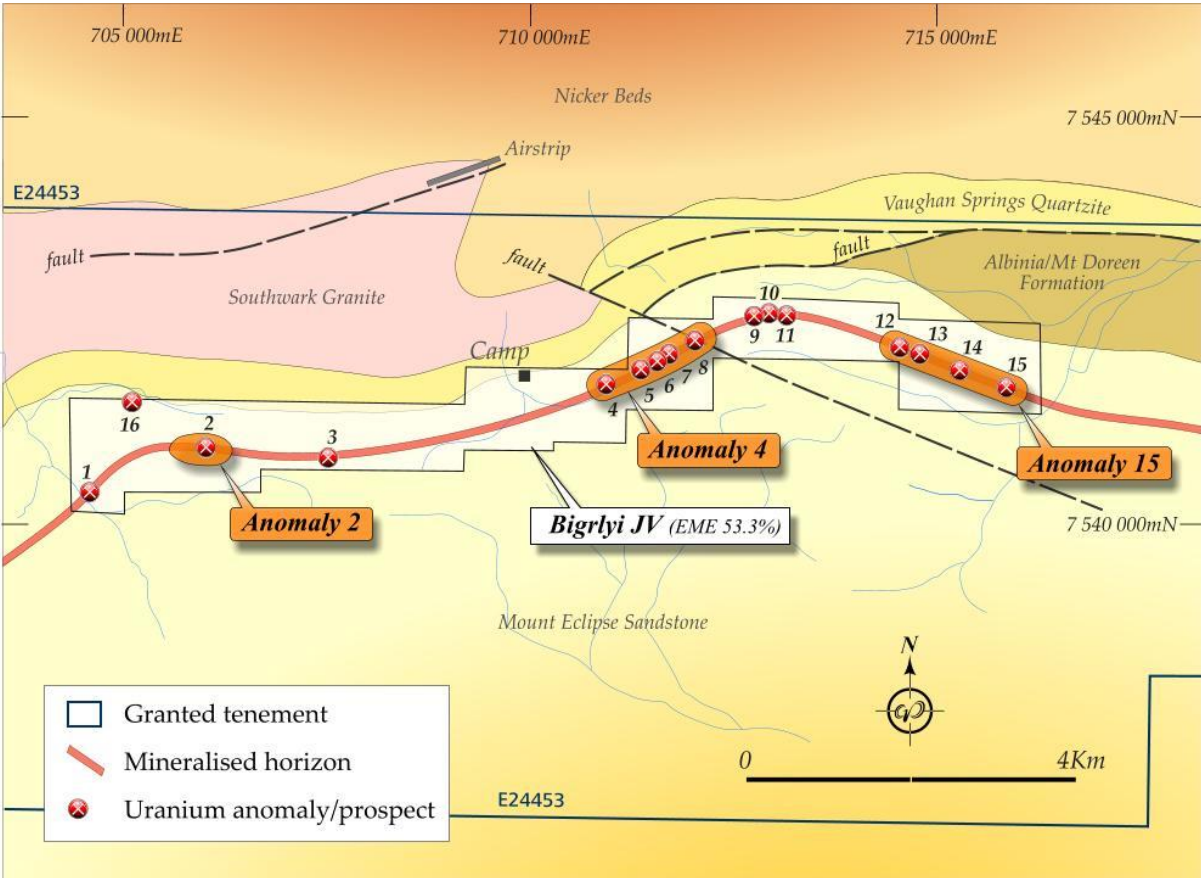
**NORTHERN TERRITORY**

**Bigrlyi (EME 53.3%)**

The Bigrlyi Project comprises 10 granted exploration retention licenses and several applications within the Ngalia Basin, located approximately 350 km northwest of Alice Springs. The project, which is a joint venture with Paladin Energy subsidiary Northern Territory Uranium Pty Ltd and Southern Cross Exploration, has been subject to significant exploration activity since discovery in 1973, including over 1,040 drill holes, metallurgical testwork and mining studies.

The Bigrlyi Project is characterised by relatively high uranium grades and excellent metallurgical recoveries. Historical base case acid leach tests recorded extraction rates of 98% uranium.

For further information on metallurgical testwork, resource estimates and economic studies please refer to ASX announcements or the Company’s website [www.energymetals.net](http://www.energymetals.net)



**Figure 2 – Bigrlyi Joint Venture Simplified Geology**

### Activities (March 2013 Quarter)

During the March 2013 quarter the main activities undertaken involved the reopening of the exploration camp and final rehabilitation of all previous exploration activities.

No significant work is planned on the Bigrlyi project for the June 2013 quarter.

### Ngalia Regional (EME 100%)

The Ngalia Regional project comprises eleven 100% owned exploration licenses (total area >3,000 km<sup>2</sup>) located in the Ngalia Basin, between 180km and 350 km northwest of Alice Springs in the Northern Territory. Eight of these tenements are contiguous and enclose the Bigrlyi project as well as containing a number of uranium occurrences including the historic Walbiri and Malawiri deposits and the Cappers deposit (Inferred Mineral Resource of 2,720 tonnes U<sub>3</sub>O<sub>8</sub> at a grade of 167ppm at 100ppm cut-off). The remaining 3 tenements are located southwest of the Bigrlyi deposits and cover discrete uranium anomalies with no evidence of previous exploration.

Seven of the eleven Ngalia Regional Exploration Licences have been granted. The remaining four applications (EL's 24450, 24462, 24805 and 27169) are located on Aboriginal Freehold land and the consent of the Traditional Owners is required before the tenements can be granted. Energy Metals has been negotiating with the Traditional Owners through the Central Land Council (CLC) and is confident that the Company will eventually gain access to these areas.

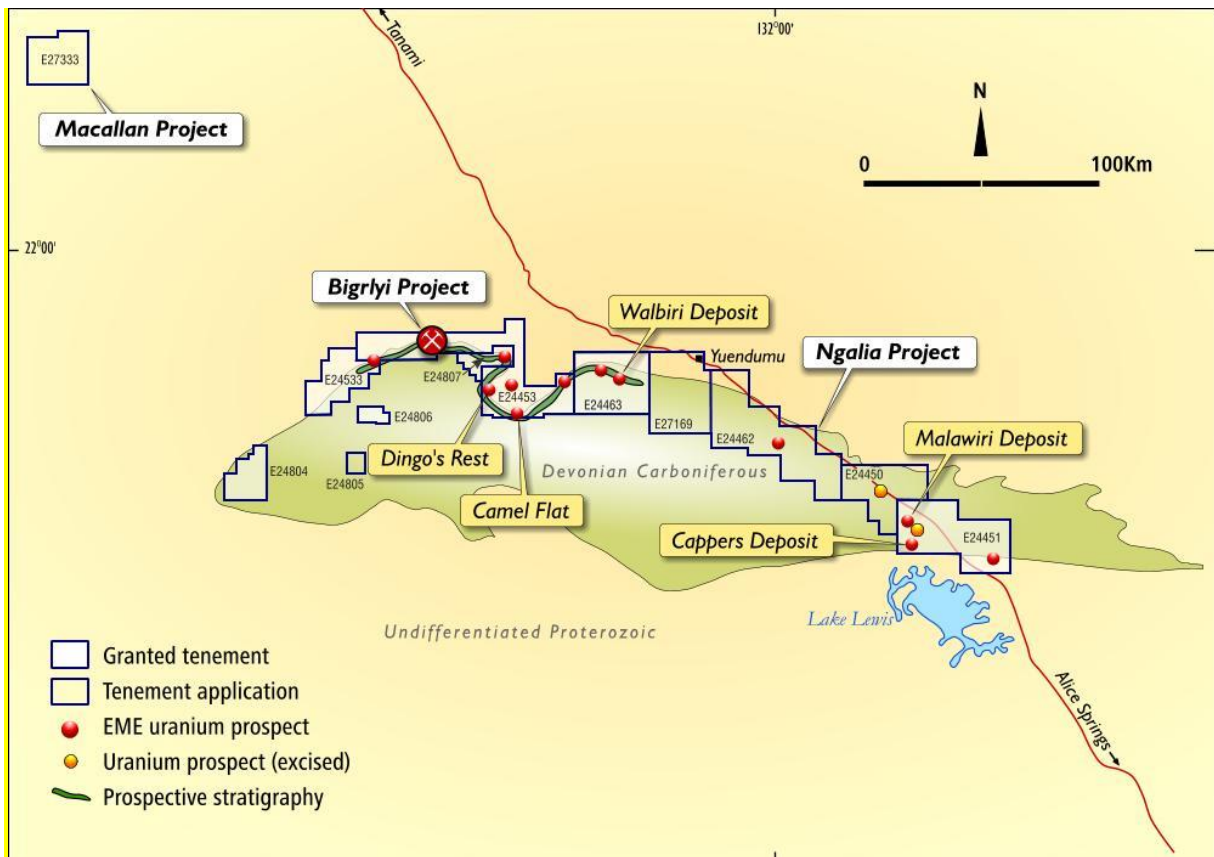


Figure 3 - Ngalia Regional Project showing uranium deposits & occurrences.

Mid July 2010 Energy Metals announced that the first diamond hole (CFD1001) drilled by the Company at the Camel Flat prospect had intersected Bigrlyi style mineralisation masked by shallow sand cover. Initial intercepts from Camel Flat compare very favourably with early drilling results from Bigrlyi and the potential for finding more uranium both along strike from Camel Flat and at several high priority targets is excellent, especially as historic drilling to test under the widespread sand cover appears to have been mostly ineffective.

Other than Camel Flat several high priority targets have been identified in the 100% Energy Metals tenements including;

- The historic Walbiri prospect
- Anomaly 15 East, the eastern extension to the Bigrlyi mineralised trend
- Dingo's Rest (north and South)
- Bigrlyi West, the western extension of the Bigrlyi mineralised trend
- Extensions of the Minerva / Malawiri prospects
- Extensions to other historic prospects.

Energy Metals intends to undertake a systematic evaluation of these prospects for the first time since the early 1980's.

### **Activities (March 2013 Quarter)**

Exploration activities conducted within the Ngalia Regional project during the quarter included geophysical surveys, rehabilitation of the previous exploration and a review and validation of various regional prospects within the basin.

### **Geophysical Surveys**

During the period Energy Metals continued the use of Induced Polarisation (IP) geophysical surveys over the extensions of the potentially mineralised stratigraphy under thin transported cover. Results from both the 2012 and 2013 surveys have shown the technique successfully maps the prospective horizons. Further geophysical surveys are currently underway prior to possible drill testing later in 2013.

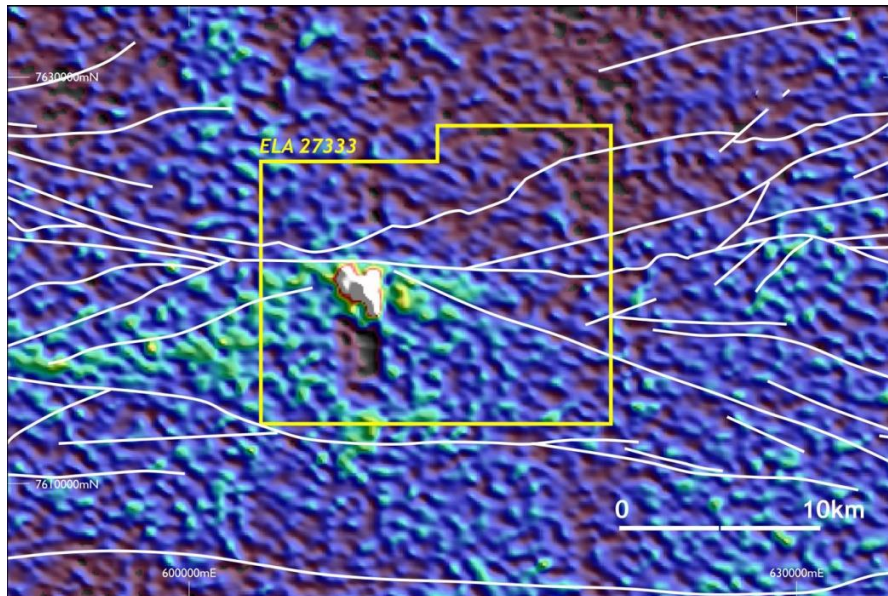
### **Regional Targets**

Numerous other historic prospects occur within the Ngalia project. Many of these prospects have had no exploration since the early 1980's; some have not previously been evaluated. The historical information from these prospects was reviewed and field visits evaluated the potential of each of the historic prospects. Most of these prospects require further exploration; this is planned as soon as reliable access can be gained for geophysical testing or drilling.

### **Macallan (EME 100%)**

The Macallan project (ELA27333) is located 460km northwest of Alice Springs and 140km from Bigrlyi. Newmont Australia's Callie Gold Mine is located a further 140km to the north. The tenement covers a strong 3km long bullseye radiometric anomaly which may indicate the presence of shallow structurally controlled uranium mineralisation.





*Macallan Project radiometric image showing interpreted regional faults (white lines).*

The application is progressing through the provisions of the Aboriginal Land Rights Act. A meeting with the traditional owners occurred in November 2011. During the June 2012 quarter the Company received advice that the CLC had been authorised by the Traditional Owners of the region to commence negotiations with the aim of developing an access agreement for Macallan.

The Company is still awaiting the draft access agreement from the CLC. Once this has been received negotiations for access will commence in an attempt to enable the tenement to be granted. When the tenement is granted the Company intends to undertake an initial field visit to review the potential of the radiometric anomaly.

## **WESTERN AUSTRALIA**

### **Manyingee (EME 100%)**

The Manyingee exploration licence (E 08/1480) is located 85 km south of the port of Onslow. The tenement (total area 86 km<sup>2</sup>) surrounds the mining leases containing Paladin Energy's Manyingee resource, a stacked series of paleo-channel hosted roll front uranium deposits.

A review of airborne EM data and historical exploration in the area has interpreted a number of paleo-channels extending into E 08/1480 from the Paladin Manyingee deposit.

A total of three holes for 288m of Rotary Mud drilling were completed during the December 2012 Quarter. All holes intersected mineralisation with the best intersection being 8m at 571ppm eU<sub>3</sub>O<sub>8</sub> from 54.75m using a 100ppm cut off including 2.65m at 1,474ppm eU<sub>3</sub>O<sub>8</sub> from 55.3m (500ppm cut off) in MRM003.

Additional drilling has been planned further upstream from the 2012 holes (away from the Manyingee deposit), together with exploration of other paleo-channels within the tenement.

## **Mopoke Well (EME 100%)**

The Mopoke Well project comprises one exploration licence (E 29/568) located 55km west of Leonora. The tenement contains two historic uranium prospects (Peninsula and Stakeyard Well), with a third prospect (Raeside) located on the western edge of the tenement. All three prospects are hosted by valley calcretes associated with the Lake Raeside drainage system.

During the quarter an initial JORC (2004) resource estimate was undertaken using the historical drilling, together with 100 aircore holes that were completed in the December 2012 quarter. The resource estimate was detailed in the ASX release on 12 March 2013.

The maiden inferred JORC (2004) resource estimate totalled 9.75Mt at 165ppm eU<sub>3</sub>O<sub>8</sub> for 1,613 tonnes or 3.56Mlb U<sub>3</sub>O<sub>8</sub> at a cut-off grade of 100ppm U<sub>3</sub>O<sub>8</sub>.

Further work planned for 2013 includes a similar metallurgical and mineralogical program as outlined below for Anketell and Lake Mason.

## **Lakeside (EME 100%)**

The Lakeside project is located in the Murchison district 20km west of Cue and comprises exploration licence E 21/120 (area 75km<sup>2</sup>). This project was acquired to follow up previously discovered carnotite mineralisation hosted by valley calcretes associated with major saline drainages.

A total of 71 aircore drill holes for 691m were completed in the December 2012 quarter testing the mapped calcrete and previous intersections from the 2007 and 2008 drill programs. The best intersection was 1.74m at 285ppm eU<sub>3</sub>O<sub>8</sub> from 1.46m in LAC236.

Samples for chemical analysis of the significant intersections from the 2012 drilling are awaiting submission to the laboratory. Geological logging of the 2012 holes is progressing.

## **Anketell (EME 100%)**

The Anketell project comprises two granted exploration licences (E's 58/289 & 58/292) with a total area of 165km<sup>2</sup>. The tenements contain shallow calcrete hosted mineralisation discovered by Western Mining (WMC) in 1972. The mineralisation is similar in style to the Yeelirrie deposit, also discovered by WMC in the same year and located 150km to the northeast.

Aircore drilling completed by Energy Metals between 2007 and 2009 confirmed the presence of uranium mineralisation in calcrete and calcareous clays with most traverses recording anomalous intercepts at shallow depths (typically within 10m of surface), and in July 2009 Energy Metals announced an Inferred Mineral Resource of 2,720 tonnes (6Mlb) U<sub>3</sub>O<sub>8</sub> at a grade of 167ppm (100ppm cut-off) at Anketell.

Anketell is located close to infrastructure, being approximately 90km east by sealed road from the mining town of Mount Magnet and 35km from the gas pipeline at Windimurra. The

project is also located approximately 45km to the SW of Energy Metals' Lake Mason project (3.7Mlb resource – see below) and takes Energy Metals' total resources in the Sandstone area (reportable under JORC) to 9.7Mlb U<sub>3</sub>O<sub>8</sub>.

Additional bulk samples were collected from Anketell during the quarter. The location of the bulk samples was determined by the depth of the mineralisation with samples taken from locations where the grades intersected in the previous aircore holes were approximately the same as the overall resource grade.

The bulk samples will undergo metallurgical and mineralogical testing to determine if a low cost beneficiation technique can be used to upgrade the mineralisation within the resource. This work commenced early in the June 2013 quarter. If the results are positive then further work to determine the viability of the project will be undertaken.

### **Lake Mason (EME 100%)**

This project comprises one granted exploration licence (E 57/590) with an area of 64km<sup>2</sup> centred 25km NNE of Sandstone and 80km SW of the Yeelirrie deposit. Previous exploration by BP Minerals in the 1970's discovered shallow carnotite mineralisation in valley calcretes associated with the Lake Mason drainage system. In June 2008 Energy Metals announced an initial Inferred Mineral Resource at Lake Mason of 1,343 tonnes (3Mlb) U<sub>3</sub>O<sub>8</sub> at a grade of 170ppm (100ppm cut-off).

An infill aircore drill program to increase the level of confidence of this resource was completed in early 2010 and mid December 2010 the Company announced that the resource at Lake Mason had been increased to 9.1Mt @ 185ppm U<sub>3</sub>O<sub>8</sub> (at 100ppm cut-off) for 1,689 tonnes (3.7Mlb) of uranium, with 62% of the resource now reporting to the Indicated Category (please refer to the ASX announcement made 17 December 2010 for further details).

A bulk sampling program similar to that at Anketell was completed at Lake Mason in the December 2012 quarter. The bulk samples will undergo both metallurgical and mineralogical analysis and tests to determine beneficiation of the mineralised material is viable, therefore improving the viability of the project. The tests commenced early in the June 2013 quarter.

### **Rawlinson (EME 100%)**

The Rawlinson Project comprises four exploration licences (total area of 1,450km<sup>2</sup>) located in the Gibson Desert, approximately 950km northeast of Kalgoorlie and 60km west of the NT border. The tenements in this project were granted on 16 November 2009.

The area is part of the Central Australia Aboriginal Reserve and due to the remote location and restricted access the geology of the area is poorly understood.

Preliminary consultations with the Ngaanyatjarra Land Council were positive however during the year Energy Metals was advised that several of the Traditional Owners were opposed to uranium exploration and mining therefore there is little chance of the Company executing an



access agreement. The status of this project and Energy Metals' ability to explore the tenements is currently being reviewed.

No exploration activity occurred during the quarter.

## **URANIUM TRADING**

On 5 April 2013 Energy Metals announced that the Australian Safeguards and Non-Proliferation Office (ASNO) had approved an extension to the Company's Permit to Possess Nuclear Material to 31 March 2018.

## **CORPORATE**

### **Board Changes**

On 26 April 2013 Energy Metals announced that Ms Zhenshu Cui had been appointed a Non-executive Director following the resignation of Dr. Xinjian Peng.

### **New Registered Office**

On 26 April 2013 Energy Metals announced that the Company's Registered Office and Principal Place of Business had changed to Level 2, 8 Colin Street, West Perth.

Information in this report relating to exploration results, data and cut off grades is based on information compiled by Mr Paul Dunbar. Mr Dunbar is a member of the AusIMM and the AIG, he is a full time employee of Energy Metals and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves – The JORC Code (2004)". Mr Dunbar consents to the inclusion of the information in the report in the form and context in which it appears.

Information in this report relating to the determination of the gamma probe results and geophysical work is based on information compiled by Mr David Wilson. Mr Wilson is a member of the AusIMM and the AIG. Mr Wilson is a consultant to Energy Metals. He has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves – The JORC Code (2004)". Mr Wilson consents to the inclusion of the information in the report in the form and context in which it appears.

\* Uranium mineralisation grades through this report are annotated with a sub-prefix 'e' because they have been reported as uranium equivalent grades derived from down-hole gamma ray logging results and should be regarded as approximations only.

Gamma logging or "total count gamma logging" (the method used by Energy Metals) is a common method used to estimate uranium grade where the radiation contribution from thorium and potassium is very small. Sandstone and calcrete hosted deposits are usually of this type.

Total count gamma logging includes the generally small number of gamma rays emitted by background levels of thorium and potassium. These background gamma rays add the equivalent of a few parts per million to the equivalent uranium values and are relatively constant in each geological unit.

Downhole gamma logging of drill holes provides a powerful tool for uranium companies to explore for and evaluate uranium deposits. Such a method measures the natural gamma rays emitted from material surrounding a drill hole. Gamma radiation is measured from a volume surrounding the drill hole that has a radius of approximately 35cm. The gamma probe is therefore capable of sampling a much larger volume than the geological samples recovered from any normal drill hole.

Gamma ray measurements are used to estimate uranium concentrations with the commonly accepted initial assumption being that the uranium is in (secular) equilibrium with its daughter products (or radio-nuclides) which are the principal gamma ray emitters. If uranium is not in equilibrium (viz. in disequilibrium), as a result of the redistribution (depletion or enhancement) of uranium and/or its daughter products, then the true uranium concentration in the holes logged using the gamma probe will be higher or lower than those reported in the announcement.

Energy Metals is undertaking measurements to determine if disequilibrium is present and its distribution via undertaking chemical analysis of all  $eU_3O_8$  intersections. Previous chemical assays from Bigryli and surrounds have confirmed the gamma intersections and as such Energy Metals believes that the Uranium in the system is in equilibrium with its daughter products.

The logging programme was undertaken by Energy Metals utilising an Auslog Logging System. The gamma tools were calibrated in Adelaide at the Department of Water in calibration pits constructed under the supervision of CSIRO. Energy Metals carries out annual recalibration checks to validate the accuracy of gamma probe data. Furthermore, Energy Metals runs regular checks to validate the accuracy of probe data using calibrated test holes located on site.

The gamma ray data was converted from counts per second to  $eU_3O_8$  using calibration factors obtained from measurements made at the calibration pits. The  $eU_3O_8$  data was also adjusted by an attenuation factor, determined onsite, due to drill rods. These factors also take into account differences in drill hole size and water content. The  $eU_3O_8$  data has been filtered (deconvolved) to more closely reproduce the true grades and thicknesses where thin narrow zones are encountered.

The various calibration factors and deconvolution parameters were calculated by David Wilson BSc MSc MAusIMM from 3D Exploration Ltd based in Perth, Western Australia.