



**ABN 63 111 306 533**

## **QUARTERLY REPORT TO SHAREHOLDERS**

for the three months ended  
31 March 2016

### **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**

### **Bigirlyi JV & Ngalia Regional Projects (NT)**

Lead isotope orientation soil survey detects  
buried mineralisation at Bigirlyi using radiogenic  
lead as a tracer.

Tenement partial surrender plan implemented  
with direct and indirect cost savings of over  
\$200K in 2016.

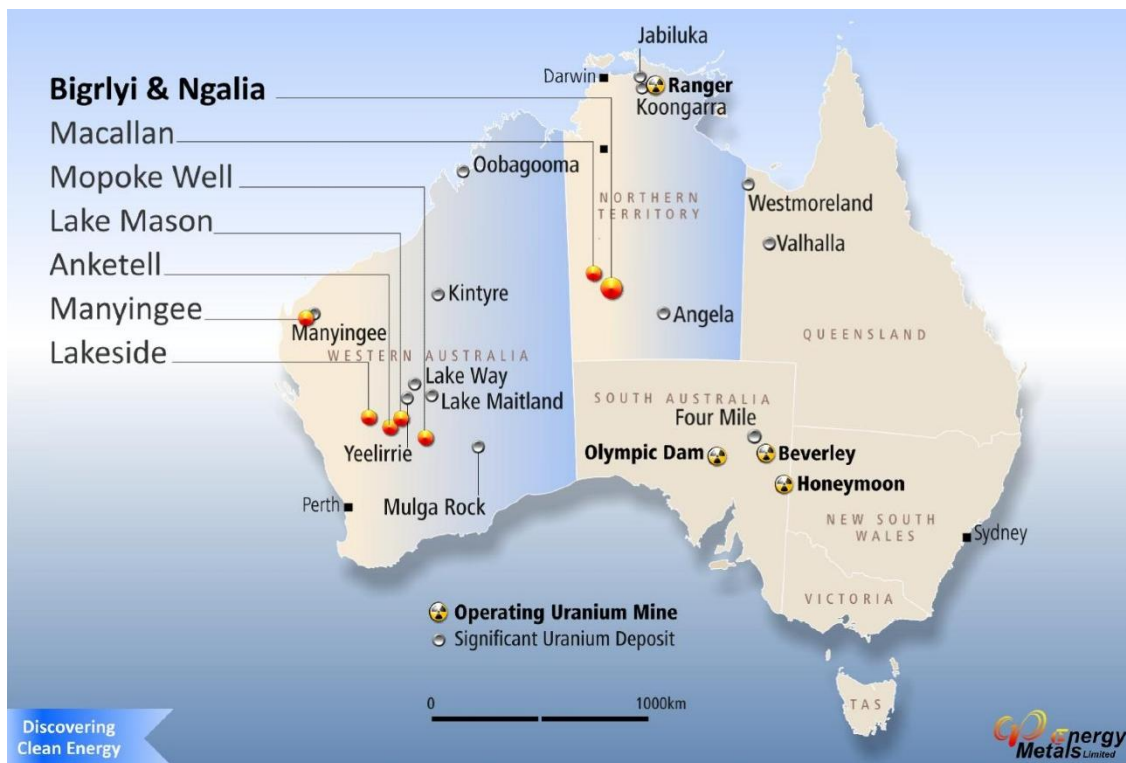
## **FINANCIAL**

Energy Metals had approximately \$21.2M in cash  
and 209.7M shares on issue at 31 March 2016.

**Weidong Xiang**  
**Managing Director**  
**29 April 2016**

## **INTRODUCTION**

Energy Metals is a dedicated uranium company with eight exploration projects located in the Northern Territory (NT) and Western Australia covering over 3,900 km<sup>2</sup> (Figure 1). 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 General Nuclear Power Group (CGN, formerly China Guangdong Nuclear Power Holding Company), ultimately Energy Metals' largest shareholder.

China Uranium Development Company Limited, Energy Metals' largest shareholder (with 66.45% of issued capital), is a wholly owned subsidiary of CGN. As of 31 March 2016, CGN had 16 operating nuclear power units with a generation capacity of 17,090MWe and more than 14,650MWe of capacity under construction in 12 other nuclear power units across various locations around China. Additionally CGN is one of only two companies authorised by the Chinese government to import and export uranium.

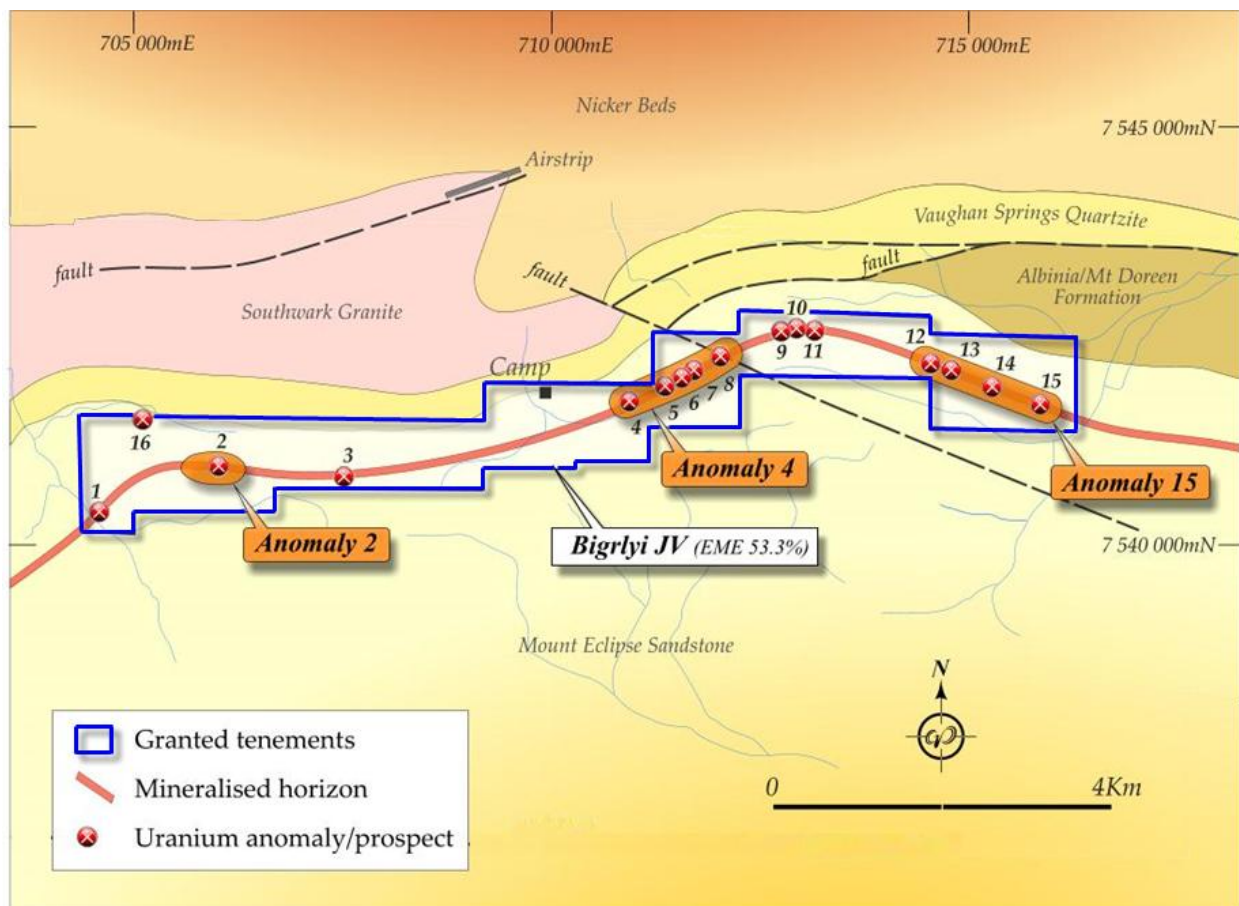
This unique relationship with CGN gives Energy Metals direct market exposure as well as access to significant capital and places the Company in a very strong position going forward.

## **NORTHERN TERRITORY**

### **Bigrlyi Joint Venture (EME 53.3%)**

The Bigrlyi Joint Venture comprises 10 granted exploration licences in retention (ELR's), three granted ELs, and several applications within the Ngalia Basin, located approximately 350km northwest of Alice Springs. EME operates the Joint Venture in partnership with Paladin Energy subsidiary Northern Territory Uranium Pty Ltd and Southern Cross Exploration. The Bigrlyi Joint Venture tenements have been subject to significant exploration activity since discovery in 1973, including over 1,040 drill holes, metallurgical testwork and mining studies, with most work undertaken at the Bigrlyi Project (Figure 2).

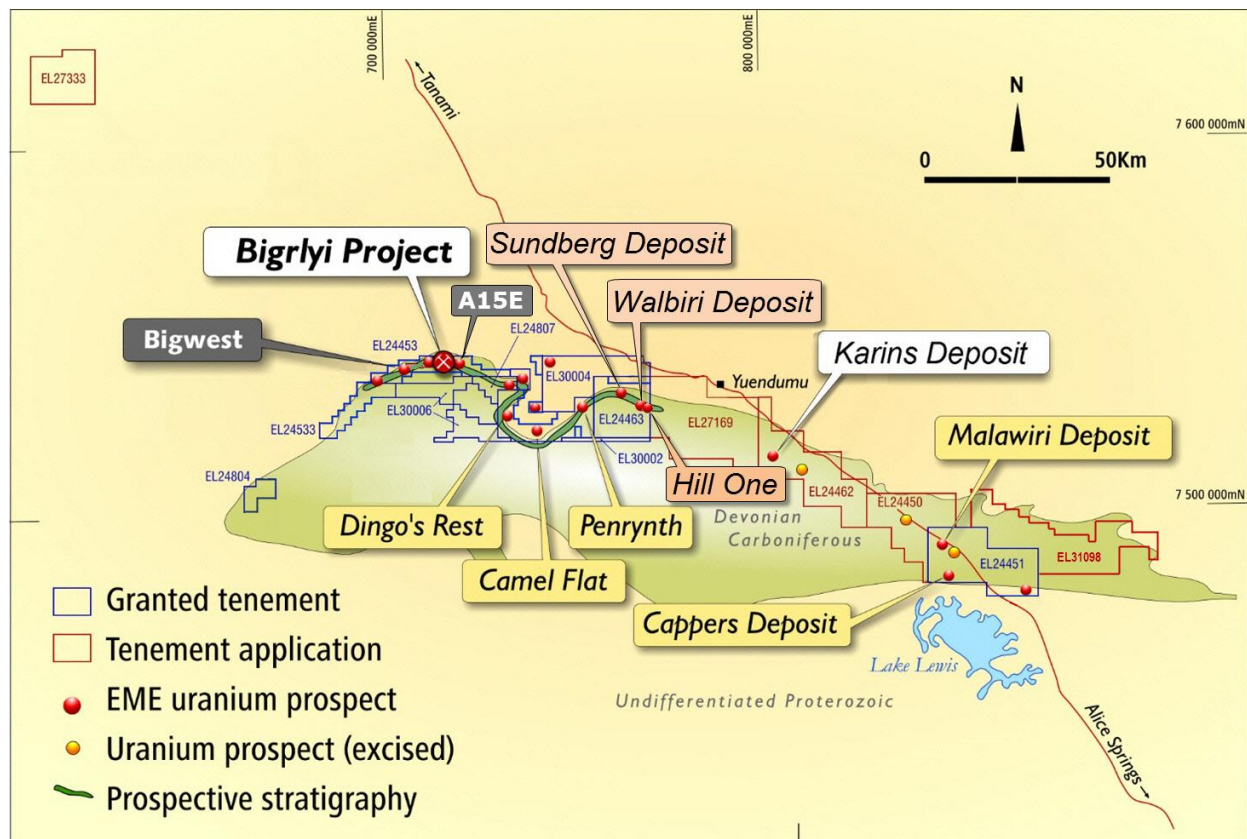
The Bigrlyi Project is characterised by relatively high uranium grades and excellent metallurgical recoveries. Historical base case acid leach tests recorded extraction rates of 98% uranium. For further information on metallurgical testwork, resource estimates and economic studies please refer to ASX announcements or the Company's website [www.energymetals.net](http://www.energymetals.net).



**Figure 2 – Bigrlyi Joint Venture Project area showing simplified geology**

The historic Karins deposit, located approximately 260km northwest of Alice Springs (Figure 3), is located on tenement applications MLN1952 and MCS318-328, which are part of the Bigrlyi Joint Venture. Karins is a tabular uranium-vanadium style of deposit similar to Bigrlyi although with an oxidised zone (carnotite zone) of variable thickness. EME acquired CPM's interest in the project in 2005, including all the historical exploration records. A maiden JORC-compliant resource estimate for the Karins Deposit was released to the ASX in July 2015.

In October 2015, a maiden JORC resource estimate was announced for the historic Sundberg deposit (Figure 3) which is partly located on Bigrlyi JV tenement EL30145 (see below).



**Figure 3 - Uranium deposits, occurrences and exploration target areas in the Ngalia Basin**

### **Walbiri Joint Venture (EME 41.9%)**

ELR45, granted in August 2014, covers part of the historical Walbiri deposit and part of the Hill One satellite deposit (Figure 3). The project is a joint venture with Paladin Energy Ltd (58.1%), with EME as the operator. In October 2015, an inferred resource of 7,037 tonnes  $U_3O_8$  at 641ppm (200ppm cut-off) was announced for the Walbiri deposit, confirming Walbiri as the third largest sandstone-hosted uranium deposit in Central Australia after Angela and Bigrlyi (refer to ASX announcement of 27<sup>th</sup> October 2015 and Table 1 below for further details).

### **Malawiri Joint Venture (EME 52.1%)**

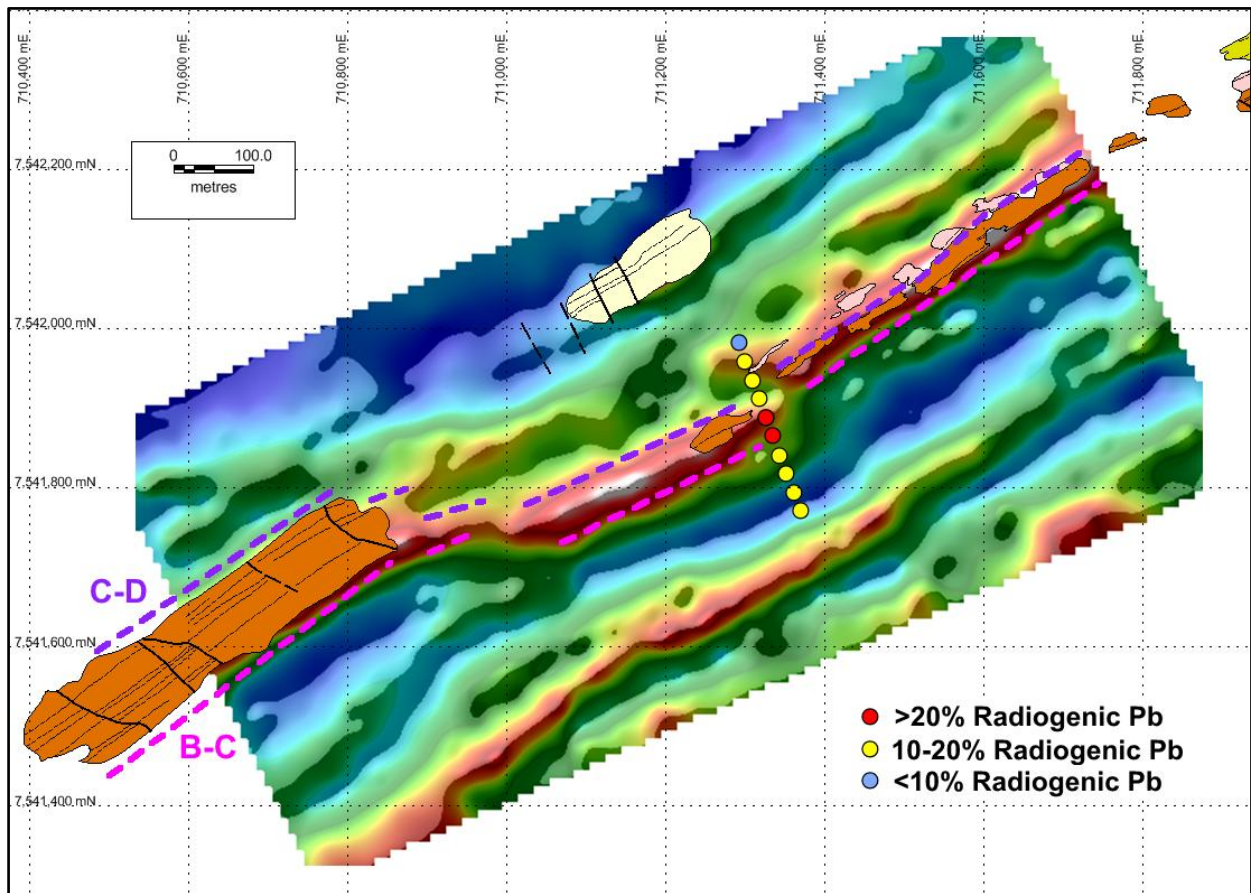
ELR41, granted in August 2014, covers the historical Malawiri Deposit to the west of Paladin's Minerva Deposit. The project is a joint venture with Paladin Energy Ltd (47.9%) with Energy Metals as the operator. A program of digitisation and reprocessing of historical gamma logs, core re-logging, and historical data compilation and verification was completed in mid-2015.

### **Activities (March 2016 Quarter)**

As part of EME's program of exploration for uranium mineralisation under cover, a trial program of soil geochemistry using a new cost-effective lead isotope measurement technique was commissioned in late 2015. The aim of the program is to detect radiogenic lead, i.e. lead derived by radioactive decay of uranium, in the soil profile above a buried deposit. Lead



isotope data from soil samples over a traverse of a buried portion of the Anomaly-4 deposit (buried under approximately 2 metres of sand) were interpreted. The results indicate that soil above the uranium prospective Unit C is significantly anomalous in radiogenic Pb with >20% of the lead in the sample being derived from decay of uranium. Furthermore, there is a large halo of moderately radiogenic lead (10-20% radiogenic) located either side of the main anomaly (Figure 4). Samples with <10% radiogenic Pb are not considered significant.



**Figure 4 – Soil sample traverse over the Anomaly-4 deposit showing detection of >20% radiogenic Pb over a buried portion of the uranium prospective Unit C (lying between the Unit B-C contact in pink and the Unit C-D contact in purple; orange shows outcropping unit C rocks). The background image is from a gradient array induced polarisation survey which highlights the prospective Unit C.**

### **Ngalia Regional Project (EME 100%)**

The Ngalia Regional project comprises thirteen 100% owned exploration licences (total area approximately 3,500 km<sup>2</sup>) located in the Ngalia Basin, between 180km and 350km northwest of Alice Springs in the Northern Territory (Figure 3). Twelve of these tenements are contiguous and enclose the Bigrlyi project as well as containing a number of uranium occurrences, including part of the historic Walbiri deposit 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).

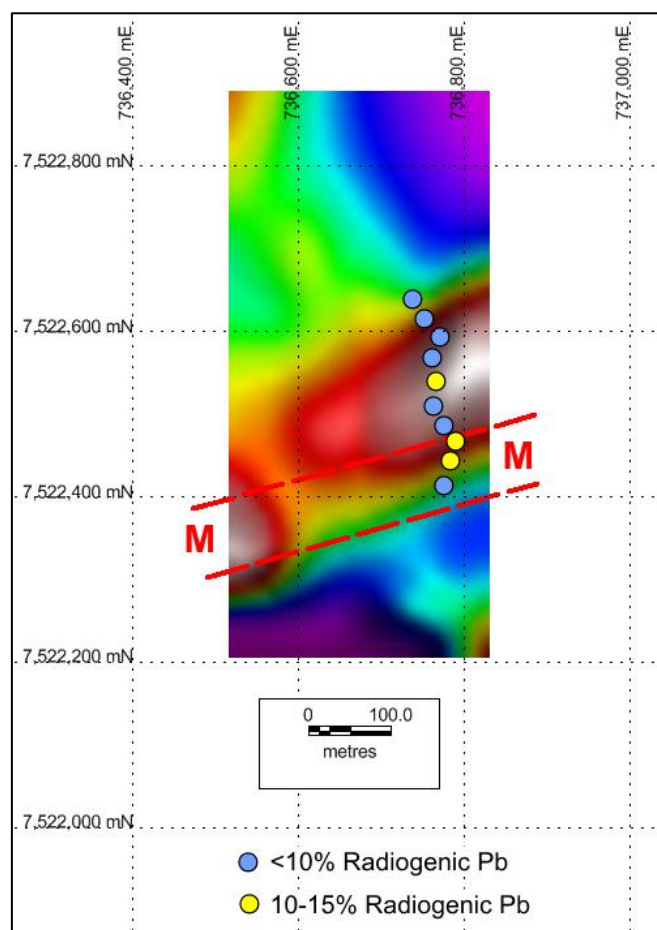
Nine of the thirteen Ngalia Regional exploration licences have been granted; three of the remaining applications (EL's 24450, 24462 and 27169) are located on Aboriginal Freehold (ALRA) land and Energy Metals is negotiating access agreements with the Traditional Owners through the Central Land Council (CLC). One application (EL31098) is located on pastoralist leasehold land in the eastern Ngalia Basin (Figure 3).

A number of high priority targets have been identified on the 100% owned tenements and Energy Metals is undertaking a program of systematic evaluation of these prospects, some of which were originally discovered in the 1970s. In February 2014, EME announced maiden resource estimates for the Bigwest, Anomaly-15 East and Camel Flat satellite deposits. In October 2015 EME announced inferred JORC resources for the historical Walbiri, Sundberg and Hill One deposits, totalling 7,456 tonnes  $U_3O_8$  at a grade of 597 ppm (see Figure 3).

### Activities (March 2016 Quarter)

Following a review designed to ensure EME's exploration efforts are focussed on the most prospective ground, the partial surrender of Ngalia tenement areas judged to be of low prospectivity was fully implemented during the quarter with consequent savings of over \$200K to both direct and indirect tenement costs (new tenement boundaries shown in Figure 3).

As mentioned above, a trial soil geochemistry program aimed at detection of buried uranium using the radiogenic lead as a tracer was undertaken last quarter. Results from a traverse over a deeply buried (30-80 m) portion of the Camel Flat deposit indicate the presence of a subtle anomaly over the mineralisation trace (Figure 5). Further work is needed to determine whether this method is useful in the detection of deeply buried uranium.



**Figure 5 – Soil sample traverse over the Camel Flat deposit showing the detection of moderately anomalous radiogenic Pb (10-15%) in two soil samples located above the trace of deeply buried (30-80 metres depth) mineralisation (M-M). Background is a gridded image showing the relative abundance of Pb in vegetation samples analysed as part of a biogeochemical orientation study over Camel Flat in 2014; note that the vegetation Pb anomaly (red and white colours) is offset to the north of the buried mineralisation trace.**

During the quarter Energy Metals' technical team began compilation and investigation of historical uranium series disequilibrium data obtained by the 'closed-can' method by previous explorer Central Pacific Minerals (CPM). CPM previously noted that higher grade parts of the Ngalia Regional uranium deposits, including Bigrlyi, may contain more uranium than measurable by gamma probe methods. Energy Metals intends to investigate whether a disequilibrium correction needs to be applied to  $eU_3O_8$  data and further closed-can assays to confirm previous measurements are planned. These results could have a positive impact on resource grades if confirmed.

Energy Metals' technical team submitted an application for collaborative funding under the NT Government's CORE Geophysics and Drilling initiative during the period. EME aims to better understand the undercover geology of the poorly explored, eastern Ngalia Basin on EL24451. If successful, the funds will cover 50% of direct program costs relating to drilling three stratigraphic holes and an associated passive seismic survey to test the depth of overburden.

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

The Macallan project comprises a single exploration licence application (ELA27333), located 460 km NW of Alice Springs and 140 km from Bigrlyi. The tenement covers a strong 3km-wide bullseye radiometric anomaly. A recent interpretation of palaeovalley systems within central Australia by Geoscience Australia indicates that the Macallan anomaly lies within the Wildcat Palaeovalley, an ancient valley system that drains into Lake Mackay to the southwest. Energy Metals considers that the Macallan anomaly most likely represents a surficial accumulation of uranium minerals associated with the Wildcat palaeodrainage system; though other explanations are possible.

ELA27333 lies on land under Aboriginal Freehold title and access is subject to negotiation with the Traditional Owners and the CLC. A draft Exploration Access agreement provided by the CLC is currently under consideration by EME. The negotiation period on the tenement has been extended until October 2016.

## **WESTERN AUSTRALIA**

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

The Manyingee exploration licence (E08/1480) is located 85 km south of the port of Onslow. The tenement (total area 86 km<sup>2</sup>) surrounds mining leases containing Paladin Energy's Manyingee resource, a stacked series of palaeochannel-hosted roll front uranium deposits.

Encouraging results were obtained from a small rotary mud drill program (18 holes for 1,790m) completed in late 2014 which affirmed the uranium potential of EME's Manyingee East Prospect, located up-channel of Paladin's Manyingee deposit (ASX release 27<sup>th</sup> October 2014).

Last year a passive seismic survey (PSS) was successfully trialled over the buried Manyingee palaeochannel allowing the channel base and structure to be defined. This year EME plans to extend the survey further to the south and east up-palaeoflow direction as well as target potential buried palaeochannels in the southern part of the tenement.

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

The Mopoke Well project is located 55km west of Leonora on retention licence R29/1. The project contains two historic uranium prospects (Peninsula and Stakeyard Well) hosted by calcretised sediments associated with the Lake Raeside drainage system. An inferred category JORC (2004) resource estimate totalling 9.75Mt at 165ppm  $eU_3O_8$  for 1,613 tonnes or 3.56Mlb  $U_3O_8$  at a cut-off grade of 100ppm  $U_3O_8$  was obtained for the Peninsula deposit in 2013 (see ASX release of 12<sup>th</sup> March 2013).

During the period R29/1 was reduced in size to cover retained resource areas only and routine environmental radiation measurements were undertaken in accordance with EME's radiation management plan.

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

The Lakeside project is located in the Murchison district 20km west of Cue on retention licence R21/1. This project was acquired to follow up previously discovered surficial uranium mineralisation at Lake Austin associated with calcrete and saline drainages. Aircore drilling campaigns were undertaken by EME in 2007, 2008, 2010 and 2012.

In June 2014 EME announced a Mineral Resource estimate of 2.74Mt at an average grade of 350 ppm  $U_3O_8$  for 960 tonnes or 2.12Mlb  $U_3O_8$  (200ppm  $U_3O_8$  cut-off grade); see ASX release of 3<sup>rd</sup> June 2014. The Mineral Resource is based on JORC (2012) definitions and the reported resource is classified as Inferred.

During the period R21/1 was reduced in size to cover retained resource areas only and routine environmental radiation measurements were undertaken in accordance with EME's radiation management plan.

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

The Anketell project is located 50km west of Sandstone on retention licence R58/2 and comprises surficial calcrete-style mineralisation discovered by Western Mining (WMC) in 1972. Following completion of aircore drilling programs, the Company announced in July 2009 an initial JORC (2004) Inferred Mineral Resource of 2,720 tonnes (6Mlb)  $U_3O_8$  at a grade of 167ppm (100ppm cut-off).

During the period R58/2 was reduced in size to cover retained resource areas only and routine environmental radiation measurements were undertaken in accordance with EME's radiation management plan.



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

The Lake Mason project is located 25km north of Sandstone on retention licence R57/2 and comprises shallow carnotite mineralisation hosted in calcrete and calcareous sediments associated with the Lake Mason drainage system.

In December 2010 the Company announced a JORC (2004) resource at Lake Mason of 9.1Mt @ 185ppm  $U_3O_8$  (at 100ppm cut-off) for 1,689 tonnes (3.7Mlb) of uranium, with 62% of the resource reporting to the Indicated Category (refer to the ASX announcement of 17<sup>th</sup> December 2010 for further details).

During the period R57/2 was reduced in size to cover retained resource areas only and routine environmental radiation measurements were undertaken in accordance with EME's radiation management plan.

## **CORPORATE**

Energy Metals remains in a strong financial position with approximately \$21.2 million in cash and bank deposits at the end of the quarter, forming a solid resource for ongoing exploration and project development.

**Table 2: Tenement Information as required by listing rule 5.3.3**

TENEMENT*	PROJECT	LOCATION	INTEREST	CHANGE IN QUARTER
<b>Northern Territory</b>				
EL24451	Ngalia Regional	Napperby	100%	partial surrender
EL24453	Ngalia Regional	Mt Doreen	100%	partial surrender
EL24463	Ngalia Regional	Mt Doreen	100%	partial surrender
EL24533	Ngalia Regional	Mt Doreen	100%	partial surrender
EL24804	Ngalia Regional	Nyirripi	100%	-
EL24807	Ngalia Regional	Mt Doreen	100%	-
ELA31098	Ngalia Regional	Napperby	100%	-
ELR46	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
ELR47	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
ELR48	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
ELR49	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
ELR50	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
ELR51	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
ELR52	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
ELR53	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
ELR54	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
ELR55	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
ELR41	Malawiri Joint Venture	Napperby	52.1%	-
ELR45	Walbiri Joint Venture	Mt Doreen	41.9%	-
EL30002	Ngalia Regional	Mt Doreen	100%	-
EL30004	Ngalia Regional	Mt Doreen	100%	-
EL30006	Ngalia Regional	Mt Doreen	100%	-
ELA27169	Ngalia Regional	Yuendumu	100%	-
EL30144	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
EL30145	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
ELA24462	Ngalia Regional	Yuendumu	100%	-
ELA24450	Ngalia Regional	Yuendumu	100%	-
ELA27333	Macallan	Tanami	100%	-
MCSA318-328	Bigirlyi Joint Venture	Yuendumu	53.3%	-
MLNA1952	Bigirlyi Joint Venture	Yuendumu	53.3%	-
EL30689	Bigirlyi Joint Venture	Mt Doreen	53.3%	-
<b>Western Australia</b>				
E08/1480	Manyingee	Yanrey	100%	-
R21/1	Lakeside	Cue	100%	partial surrender
R29/1	Mopoke Well	Leonora	100%	partial surrender
R57/2	Lake Mason	Sandstone	100%	partial surrender
R58/2	Anketell	Sandstone	100%	partial surrender

\* EL = Exploration Licence (NT); ELA = Exploration Licence Application (NT); ELR = Exploration Licence in Retention (NT); ELRA = Exploration Licence in Retention Application (NT); MCSA = Mineral Claim (Southern) Application (NT); MLNA = Mineral Lease (Northern) Application (NT); E = Exploration Licence (WA); R = Retention Licence (WA).

## **Competent Persons Statement**

*Information in this report relating to exploration results, data and cut-off grades is based on information compiled by Dr Wayne Taylor and Mr Lindsay Dudfield. Mr Dudfield is a member of the AusIMM and the AIG. Dr Taylor is a member of the AIG and is a full time employee of Energy Metals; Mr Dudfield is a consultant to Energy Metals. They both have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are 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 (2012)”. Dr Taylor and Mr Dudfield both consent 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 gamma probe results and related 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 (2012)”. Mr Wilson consents to the inclusion of the information in the report in the form and context in which it appears.*