



ABN 63 111 306 533

## QUARTERLY REPORT TO SHAREHOLDERS

for the three months ended  
31 March 2019

### ASX Code - EME

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This report and further  
information are available on  
Energy Metals' website at:

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



## HIGHLIGHTS

### Bigrlyi JV Project (NT)

Further results from investigation of vanadium  
mineralisation at Bigrlyi.

Metallurgical 'road-map' study commences.

### Ngalia Regional Project (NT)

Tenement reduction and consolidation plan in  
progress.

### WA Projects

Tenement reduction plan completed.

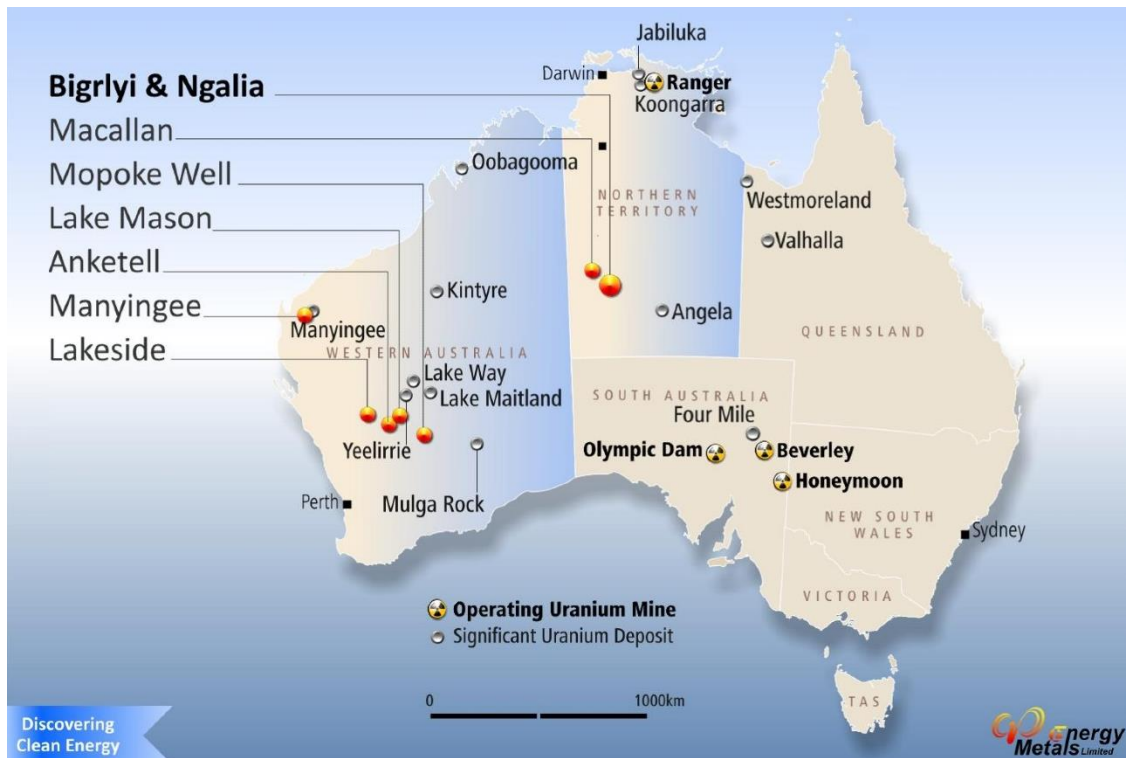
## FINANCIAL

Energy Metals had approximately \$18.03M in cash  
and 209.7M shares on issue at 31 March 2019.

**Shuqing Xiao**  
**Managing Director**  
**29 April 2019**

## INTRODUCTION

Energy Metals (EME) is a dedicated uranium company with eight exploration projects located in the Northern Territory (NT) and Western Australia covering over 3,200 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 has completed its first shipment of UOC and is negotiating with Australian uranium producers to enable further shipments from Australia for resale, primarily to major Chinese utility China General Nuclear Power Group (CGN), 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 December 2018, the installed capacity of CGN's operating nuclear generating plants was 24,300MWe from 22 nuclear power units with six other power units of 7,430MWe capacity under construction in various locations across China. Additionally, CGN is one of only two companies authorised by the Chinese government to import and export uranium.

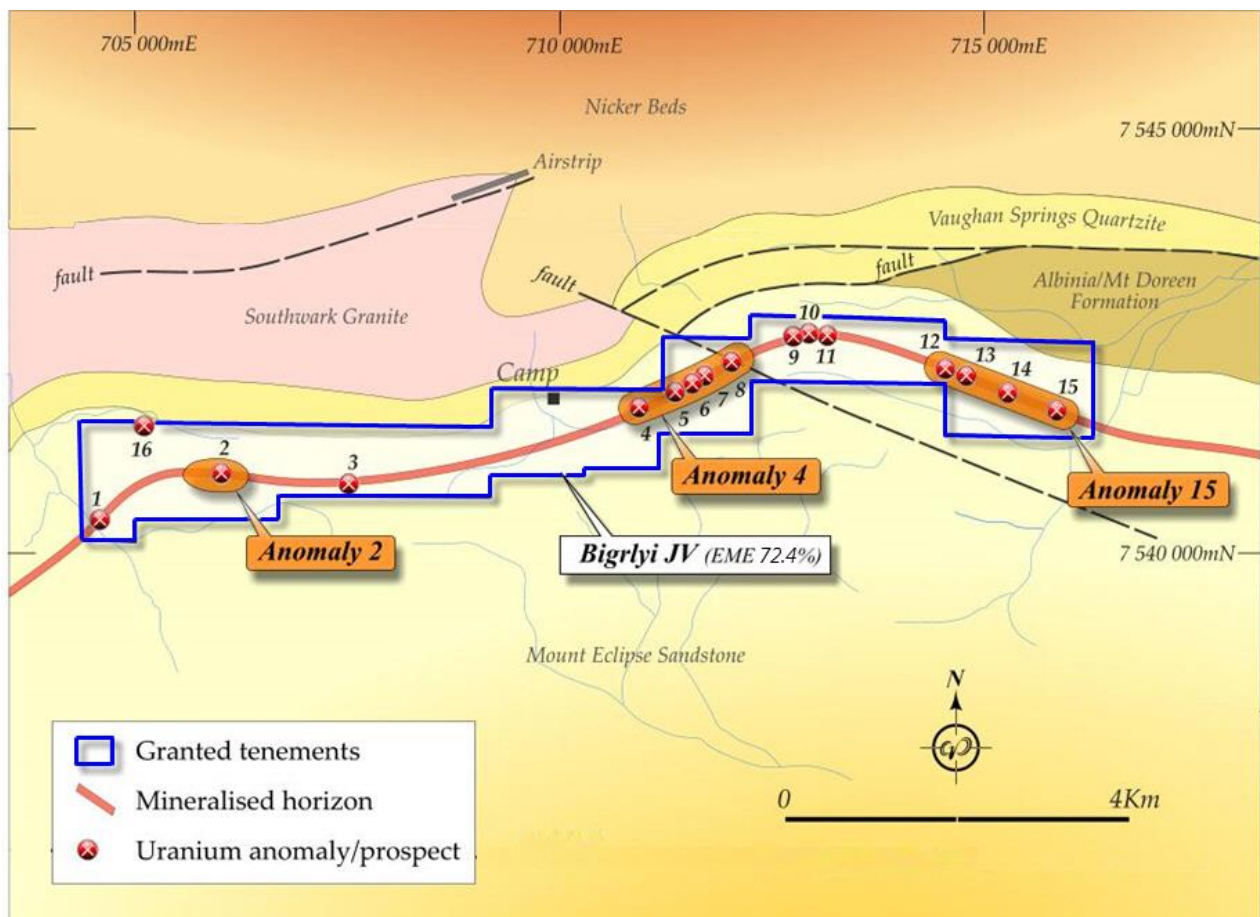
This unique relationship with CGN gives Energy Metals direct market exposure as well as access to significant capital and places the Company in a very strong position going forward.

## **NORTHERN TERRITORY**

### **Bigrlyi Joint Venture (EME 72.39%)**

The Bigrlyi Joint Venture comprises 11 granted exploration licences in retention (ELRs), one granted EL, and several applications within the Ngalia Basin, located approximately 350km northwest of Alice Springs. EME operates the Joint Venture in partnership with Northern Territory Uranium Pty Ltd and Southern Cross Exploration NL. The Bigrlyi Joint Venture tenements have been subject to significant exploration activity since discovery in 1973, including over 1,040 drill holes, metallurgical test-work and mining studies, with most work undertaken at the Bigrlyi project (Figure 2).

The Bigrlyi project is characterised by relatively high uranium grades, vanadium credits and excellent metallurgical recoveries. Historical base case acid leach tests recorded extraction rates of 98% uranium. For further information on metallurgical test-work, resource estimates and economic studies refer to ASX announcements or Company 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 (2012) resource estimate was announced for the historic Sundberg deposit, a satellite of the larger Walbiri deposit (Figure 3).

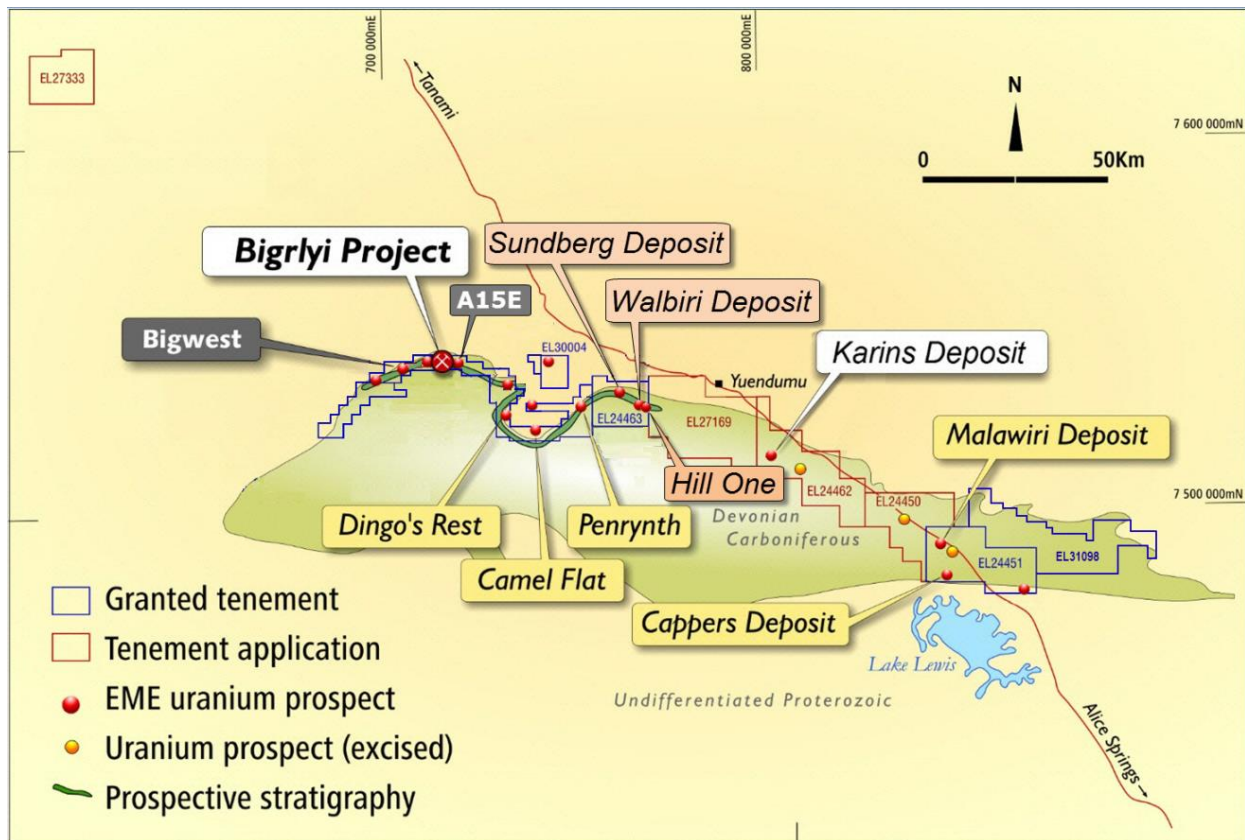


Figure 3 - Uranium deposits, occurrences and exploration target areas in the Ngalia Basin

### **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 Northern Territory Uranium Pty Ltd (58.1%), with EME as the operator. In October 2015 an initial JORC (2012) mineral resource estimate was announced for the Walbiri deposit, confirming Walbiri as the third largest sandstone-hosted uranium deposit in Central Australia after Angela and Bigrlyi.

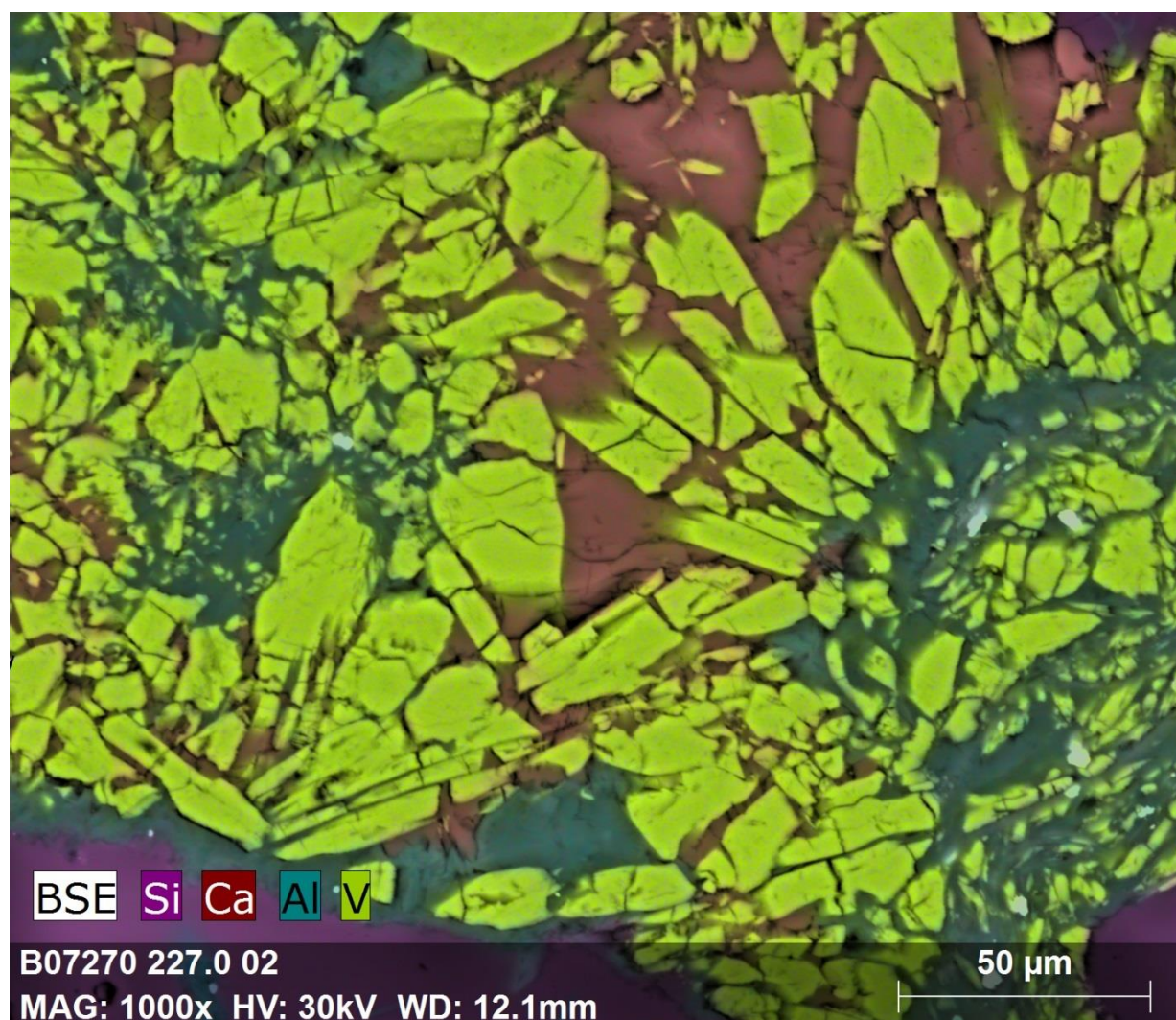
### **Malawiri Joint Venture (EME 52.1%)**

ELR41, granted in August 2014, covers the historical Malawiri deposit. The project is a joint venture with Northern Territory Uranium Pty 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 and a small drilling program was completed in September 2016. In late 2017 EME advanced the Malawiri project to JORC-compliant resource status with announcement of a maiden inferred-category mineral resource estimate of 542 tonnes  $U_3O_8$  (for further details see ASX announcements of 27 September 2016 & 14 December 2017).

### JV Activities (March 2019 Quarter)

Energy Metals' exploration strategy is to progressively advance its projects toward economic development within current market constraints. For its advanced JV projects, Energy Metals' aim is to ensure that they meet the high standards necessary for any future development to proceed in a timely manner once market conditions improve.

**Vanadium Study.** Recently there has been renewed market interest in vanadium resulting in substantial price increases last year. Currently the vanadium price is around US\$12/lb  $V_2O_5$  or about twice that of long-term historical averages; a price of this order is expected to be sustained in the medium-term by demand from the steel industry and new developments in battery technologies. The recovery of vanadium is likely to enhance the economics of a uranium mining development at Bigrlyi where vanadium is a significant accessory commodity. During the period Energy Metals continued its program to further investigate vanadium mineralogy and metallurgy at Bigrlyi, including studies on the controls and distribution of vanadium mineralisation in cooperation with CSIRO researchers. Some new results have been received this period including the identification of the previously unrecognised vanadium mineral häggite,  $V_2O_2(OH)_3$ , which appears to be a significant host for vanadium in some parts of the Bigrlyi deposit (Figure 4).



*Figure 4: Scanning electron microscope image (1000x magnification) from a thin section of Anomaly-15 vanadium-rich core sample B07270-227m ( $V_2O_5$  0.88%,  $U_3O_8$  0.066%); colour-categorised by elemental abundance. The image shows prismatic crystals of häggite (bright green) set in a matrix of calcite (red) and vanadium-rich clay minerals (blue-green).*

Häggite contains about 80% vanadium oxides in the form of both  $V_2O_3$  and  $V_2O_4$ , and is a well-known vanadium mineral in the uranium-vanadium deposits of the Colorado Plateau, USA, which show close mineralogical similarities with the Bigrlyi deposit.

A final report on the vanadium study is expected next quarter.

**Metallurgical Review.** Following receipt of the metallurgical review conducted by external consultants in the last quarter, EME has commenced an internal 'road-map' study to consider the range of metallurgical processing options available for co-recovery of uranium and vanadium from Bigrlyi uranium-vanadium ores. The study will take advantage of the extensive historical metallurgical work undertaken on Colorado Plateau roscoelite-type vanadium ores and more recent metallurgical investigations of vanadium recovery from shale-type vanadium deposits. The aim of this project is to develop a number of extraction and recovery options that can form the basis of a laboratory-based metallurgical test-work program planned for later in the year.

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

The Ngalia Regional project comprises twelve 100% owned exploration licences (total area approximately 3,100 km<sup>2</sup>) located in the Ngalia Basin, between 180km and 350km northwest of Alice Springs in the Northern Territory (Figure 3). The 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.

Nine of the twelve Ngalia Regional exploration licences have been granted; the three remaining applications (ELs 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) (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 and in October 2015 EME announced inferred JORC resources for the historical Walbiri, Sundberg and Hill One deposits (Figure 3).

### **Activities (March 2019 Quarter)**

During the quarter, planning was undertaken for proposed field work in the coming field season and a program of tenement reorganisation and consolidation was commenced to both save on costs and allow EME's exploration activities on the Ngalia Regional project to be focused on the most prospective areas. The reorganisation of EL31821 involved the amalgamation of the eastern part of EL31821 with the adjacent title EL24463 (Table 2). Additional programs for 2019 include:

- Continuation of a geophysical targeting program for undercover prospects in the eastern Ngalia Basin with a final report expected from EME's geophysical consultants next quarter;
- A geochemical investigation of historical, regional drill core samples that may not have previously been assessed for vanadium potential due to low uranium contents.

### **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. The Macallan anomaly lies within the Wildcat Palaeovalley, an ancient valley system that drains into Lake Mackay to the southwest. The Macallan anomaly most likely represents a surficial accumulation of uranium minerals associated with the Wildcat palaeodrainage system, although 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. The negotiation period has been extended until October 2019 and the CLC are currently reviewing EME's comments on a draft exploration agreement.

## **WESTERN AUSTRALIA**

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

The Manyingee project comprises retention licence application R08/3, underlying tenement E08/1480 and exploration licence application E08/2856, which are located 85 km south of Onslow. The project is located adjacent to mining leases containing Paladin Energy's Manyingee resource, a stacked series of buried, palaeochannel-hosted, roll-front uranium deposits. In November 2016 EME announced an initial JORC (2012) Mineral Resource Estimate for the Manyingee East uranium deposit, which is located up-channel of Paladin's Manyingee deposit.

Law firm Gilbert+Tobin were appointed last quarter to assist Energy Metals with landholder objections to grant of the Manyingee title applications. An affidavit was lodged with the objector's solicitor on 12 April 2019. The objections are expected to proceed to Warden's Court hearings over the coming months.

### **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. A JORC (2004) mineral resource estimate was released to the ASX in March 2013.

To save on holding costs, the size of the retention licence was decreased by approximately 58% to 656 hectares during the quarter; all the resource areas remain within the boundaries of the reduced licence area.

### **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. Following completion of aircore drilling programs, a JORC (2012) mineral resource estimate was released to the ASX in June 2014.

There was no activity during the period.

### **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, an initial JORC (2004) mineral resource estimate was released to the ASX in July 2009.

To save on holding costs, the size of the retention licence was decreased by approximately 63% to 804 hectares during the quarter; all the resource areas remain within the boundaries of the reduced licence area.

### **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. A JORC (2004) mineral resource estimate was released to the ASX in December 2010.

There was no activity during the period.

### **CORPORATE**

Energy Metals remains in a strong financial position with approximately \$18.03 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%	-
EL24463	Ngalia Regional	Mt Doreen	100%	-
EL31098	Ngalia Regional	Napperby	100%	-
EL31820	Ngalia Regional	Mt Doreen	100%	<b>Partial Surrender</b>
EL31821	Ngalia Regional	Mt Doreen	100%	-
ELA32113	Ngalia Regional	Mt Doreen	100%	<b>Application for Amalgamated Tenement</b>
ELR31754	Ngalia Regional	Mt Doreen	100%	-
ELR31755	Ngalia Regional	Mt Doreen	100%	-
ELR31756	Ngalia Regional	Mt Doreen	100%	-
ELR46	Bigrlyi Joint Venture	Mt Doreen	72.39%	-
ELR47	Bigrlyi Joint Venture	Mt Doreen	72.39%	-
ELR48	Bigrlyi Joint Venture	Mt Doreen	72.39%	-
ELR49	Bigrlyi Joint Venture	Mt Doreen	72.39%	-
ELR50	Bigrlyi Joint Venture	Mt Doreen	72.39%	-
ELR51	Bigrlyi Joint Venture	Mt Doreen	72.39%	-
ELR52	Bigrlyi Joint Venture	Mt Doreen	72.39%	-
ELR53	Bigrlyi Joint Venture	Mt Doreen	72.39%	-
ELR54	Bigrlyi Joint Venture	Mt Doreen	72.39%	-
ELR55	Bigrlyi Joint Venture	Mt Doreen	72.39%	-
ELR41	Malawiri Joint Venture	Napperby	52.1%	-
ELR45	Walbiri Joint Venture	Mt Doreen	41.9%	-
EL30004	Ngalia Regional	Mt Doreen	100%	-
ELA27169	Ngalia Regional	Yuendumu	100%	-
EL30144	Bigrlyi Joint Venture	Mt Doreen	72.39%	-
ELR31319	Bigrlyi Joint Venture	Mt Doreen	72.39%	-
ELA24462	Ngalia Regional	Yuendumu	100%	-
ELA24450	Ngalia Regional	Yuendumu	100%	-
ELA27333	Macallan	Tanami	100%	-
MCSA318-328	Bigrlyi Joint Venture	Yuendumu	72.39%	-
MLNA1952	Bigrlyi Joint Venture	Yuendumu	72.39%	-
<b>Western Australia</b>				
E08/1480	Manyingee	Yanrey	100%	-
E08/2856	Manyingee	Yanrey	100%	-
R08/3	Manyingee	Yanrey	100%	-
R21/1	Lakeside	Cue	100%	-
R29/1	Mopoke Well	Leonora	100%	<b>Partial Surrender</b>
R57/2	Lake Mason	Sandstone	100%	-
R58/2	Anketell	Sandstone	100%	<b>Partial Surrender</b>

\* 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.*

*This report references mineral resource estimates and/or related information that was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.*