



ABN 63 111 306 533

## QUARTERLY REPORT TO SHAREHOLDERS

for the three months  
ended 30<sup>th</sup> June 2012

### ASX Code - EME

For further information, contact:

Dr Weidong Xiang  
Energy Metals Limited

Telephone: 61 8 9322 6904  
Facsimile: 61 8 9321 5240  
Email: [enquiry@energymetals.net](mailto:enquiry@energymetals.net)  
Ground Floor, 10 Kings Park Road  
West Perth WA 6005

PO Box 1323  
West Perth WA 6872

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

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



## HIGHLIGHTS

### EXPLORATION

- \* Newly recognised geological controls on mineralisation at Bigrlyi will assist with both regional and local scale targeting
- \* Metallurgical evaluation of Alkaline leach of Bigrlyi ore is continuing
- \* Re-estimation of the existing Bigrlyi resources expected in the coming months
- \* Re-evaluation of numerous historical regional prospects on 100% EME tenements is ongoing

### URANIUM TRADING

- \* Amendments to the Natural Uranium Concentrates Sales Agreements were signed with the Australian Supplier and CGNPC-URC, respectively. The shipping date has now been extended to no later than 31 October 2012
- \* All prerequisite government approvals have been received
- \* The ASX has agreed to grant a waiver from ASX Listing Rule 10.1 under the new shipping schedule

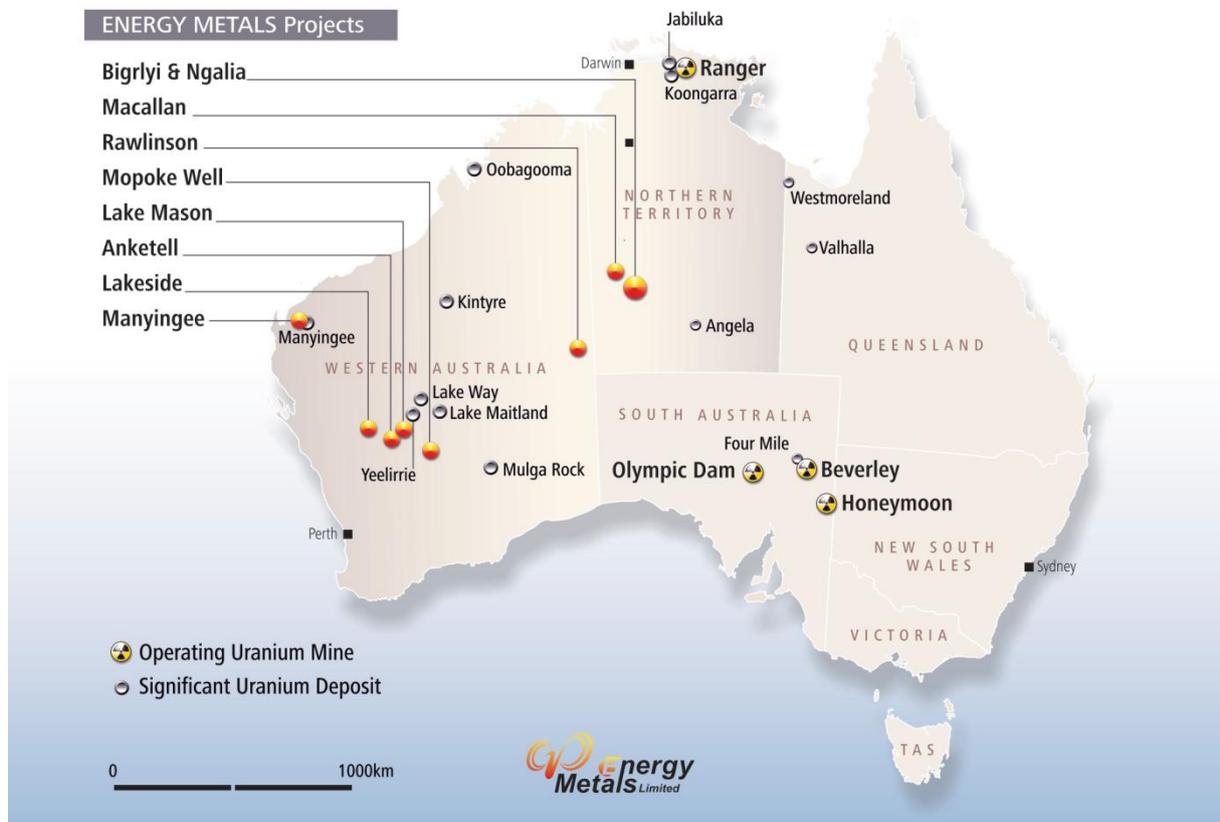
## CORPORATE

- \* In July Dr Xinjian Peng and Ms Yunfei Jin were appointed Non-executive directors and Mr Bin Cui and Ms Xiaowei Zheng both resigned from the Board. Mr Bin Cui remains as the Chief Financial Officer
- \* Energy Metals had approximately \$24.04M in cash and 153.8M shares on issue at 30<sup>th</sup> June 2012

**Weidong Xiang**  
Managing Director  
30<sup>th</sup> July 2012

**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 Bigrlyi Project (NT).



**Figure 1 – Location of Energy Metals Projects**

Australia has significant uranium endowment with the continent containing approximately 36% of the world’s low cost uranium resources. With the changing political and public sentiment to uranium mining in Australia and nuclear power playing an increasing role in reducing global carbon emissions Energy Metals is well placed to take advantage of the favourable outlook for the metal.

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 is currently negotiating purchase agreements with Australian uranium producers to enable the export of UOC from Australia for resale, primarily to major Chinese utility



**ABN 63 111 306 533**

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. CGNPC currently has six operating nuclear power stations with existing generation capacity of 6,110 MWe and with more than 17,540 MWe of capacity currently under construction in 15 separate power stations across various locations around China. Two of these 15 nuclear power stations are due to be completed and placed into commercial operation in 2012. 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**

### **Bigryli (EME 53.3%)**

The Bigryli 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 1040 drillholes, metallurgical testwork and mining studies.

The Bigryli 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)

### **Activities (June 2012 Quarter)**

During the June quarter the main activities undertaken included;

- Database validation and compilation
- Interpretation of the newly acquired geological mapping
- Validation of the current geological model,
- Re -evaluation of the preferred metallurgical leach options
- Rehabilitation of all existing exploration activities.

ABN 63 111 306 533

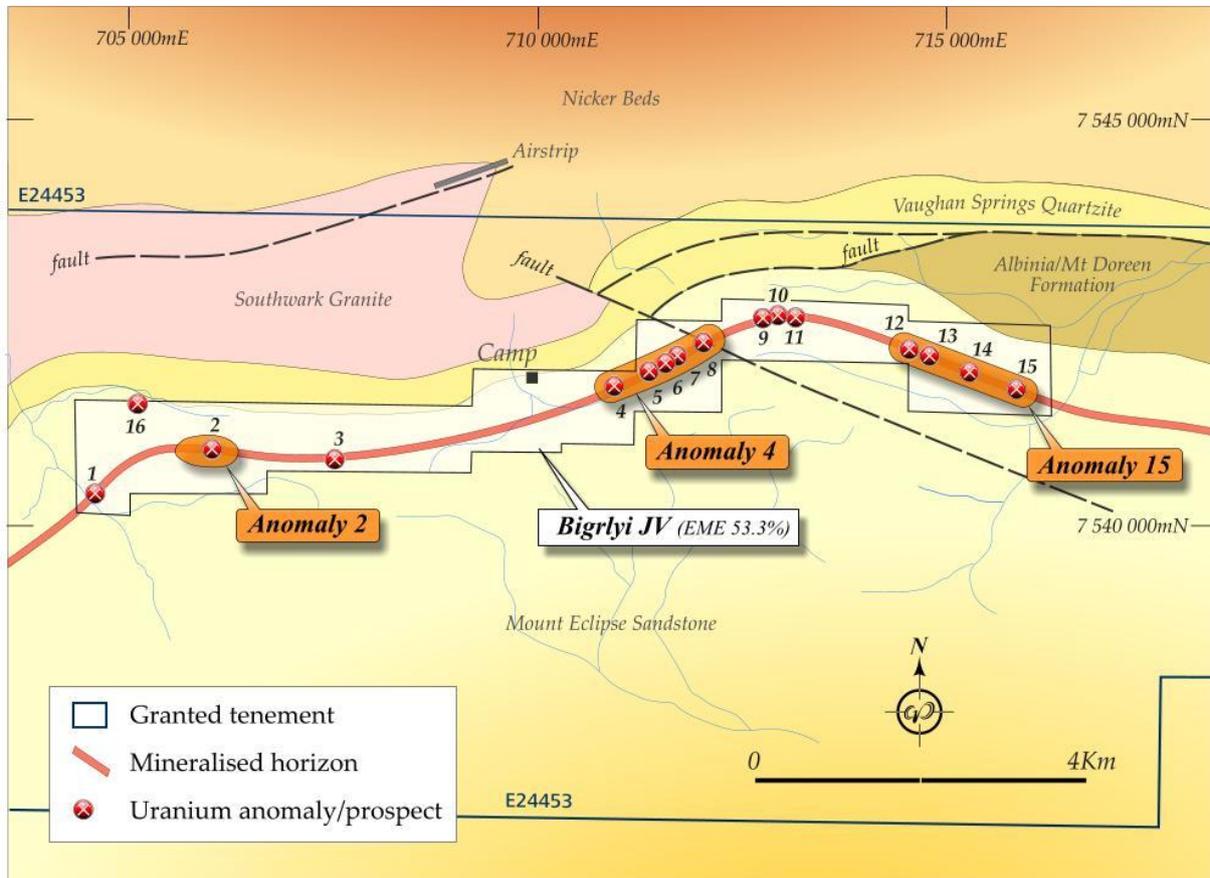


Figure 2 – Bigrlyi Joint Venture Simplified Geology

Validation of the existing drilling database continued during the quarter. This work was completed late in the quarter with the new database being used to validate drill targets and in an updated resource estimate using all the historical and recent drilling, including the 2011 drilling. The new resource estimate is expected to be completed in the September quarter and will be used in an updated Pit Optimisation and financial analysis planned to be completed later this year. An analysis of the new model will assist in targeting future exploration.

A comparative study into the two alternatives for extracting the uranium from the ore at Bigrlyi (acid leach and alkaline leach) continued during the quarter. While this work is ongoing an initial, preliminary, report has been received. The two alternatives both have advantages and disadvantages for specific styles of mineralisation and have significantly different processing facilities and cost structures. The analysis has aimed to quantify these differences at a Scoping Study level of accuracy. The reason for this level of accuracy is primarily due to the lack of several tests of the alkaline process. Alkaline processing was previously discounted after initial evaluation from the Pre-Feasibility study (PFS). This new study suggests that whilst the estimated operating costs of the two processes are much



**ABN 63 111 306 533**

closer than the work from the PFS acid leach is still favoured, although further work is required prior to excluding either process. One factor which could influence any final decision would be the mineralogy of any additional resources that may be discovered in the region as alkaline leach may be able to leach higher carbonate ore at a lower cost than acid leach.

Paladin Energy, one of the joint venture parties, has greatly assisted with much of this work.

Significant work was completed in the quarter to ensure all the rehabilitation of all the previous exploration has been completed.

Following completion of the resource, pit optimisation and revised economic modelling, expected in the September quarter, it is hoped that drilling of some targets identified through this re interpretation of the deposits can commence later this year.

### **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.

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 anomalous downhole probe values from CFD1001 were subsequently confirmed by chemical assay, returning an intercept of 27m @ 2,708ppm U<sub>3</sub>O<sub>8</sub> & 755ppm V<sub>2</sub>O<sub>5</sub> from 93.0m, including 5.0m @ 13,269ppm (1.33%) U<sub>3</sub>O<sub>8</sub> & 2,944ppm V<sub>2</sub>O<sub>5</sub>.

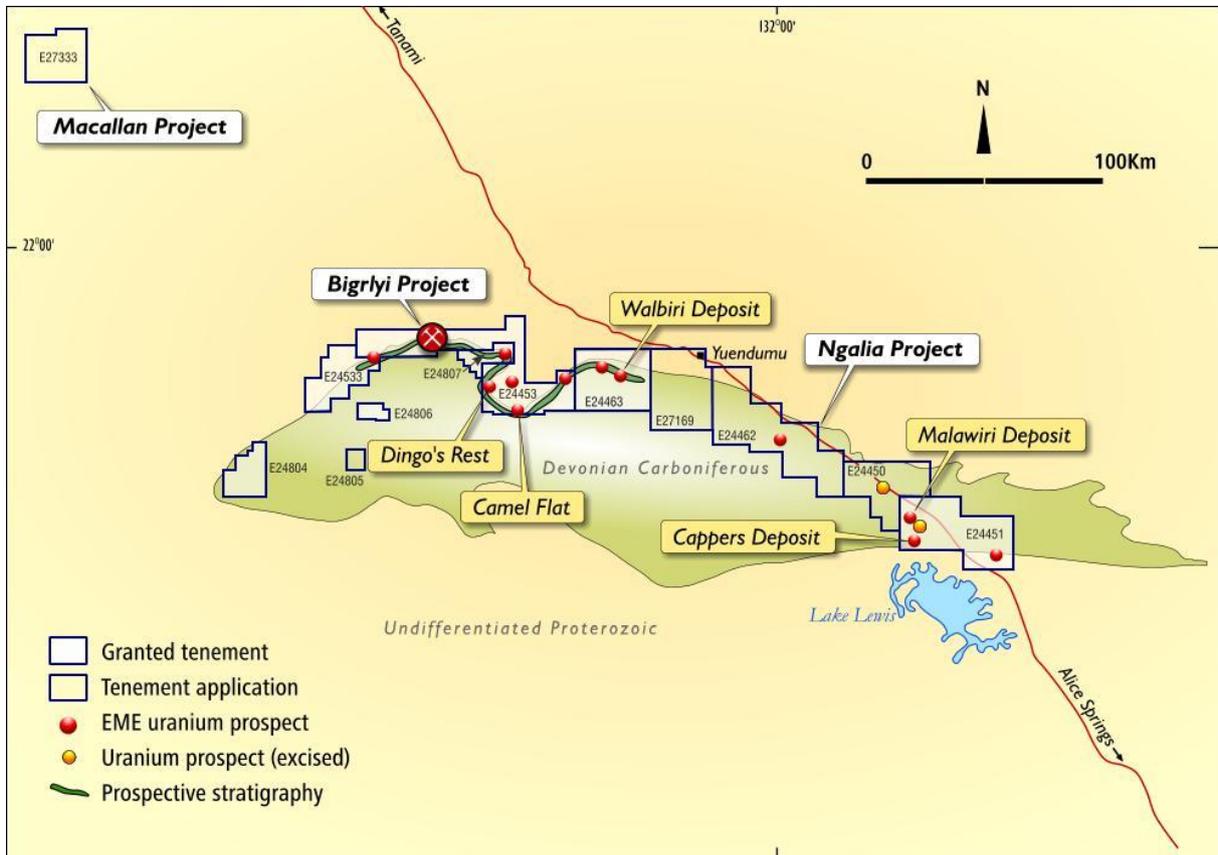


Figure 3 - Ngalia Regional Project showing uranium deposits & occurrences.

These intercepts from Camel Flat compare very favourably with early drilling results from Bigrlyi and the potential for finding more uranium along strike from Camel Flat is excellent, especially as historic drilling to test under the widespread sand cover appears to have been ineffective.

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)
- West of the Anomaly 1 prospect of Bigrlyi
- 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.



**ABN 63 111 306 533**

### **Activities (June 2012 Quarter)**

Exploration activities conducted within the Ngalia Regional project during the quarter included re-evaluation of Camel Flat and Anomaly 15 East in light of the mineralisation models from the recent Bigrlyi studies, and initial prioritisation of the various regional prospects within the basin.

Drilling at the Camel Flat prospect (located within E24453) during 2010 intersected significant high grade mineralisation within a specific stratigraphic horizon concealed beneath 3 to 5m of transported sand. Further work in 2011 intersected sporadic mineralisation along a significant strike length.

Exploration drilling within the Anomaly 15 East prospect during 2011 targeted the strike extensions to the mineralised unit that hosts most of the mineralisation at Bigrlyi. Significant gamma probe intersections have been returned including 6m @ 1,940ppm eU<sub>3</sub>O<sub>8</sub> in B11012, 2.95m at 1,089ppm eU<sub>3</sub>O<sub>8</sub> in B11039 and 1.45m @ 315ppm eU<sub>3</sub>O<sub>8</sub> in B11035.

The significance of Camel Flat and Anomaly 15 east prospects is currently being evaluated with further drilling around the mineralisation intersected in 2010 and 2011 planned for the 2012 field season. It is expected that a drilling program will commence during the September quarter.

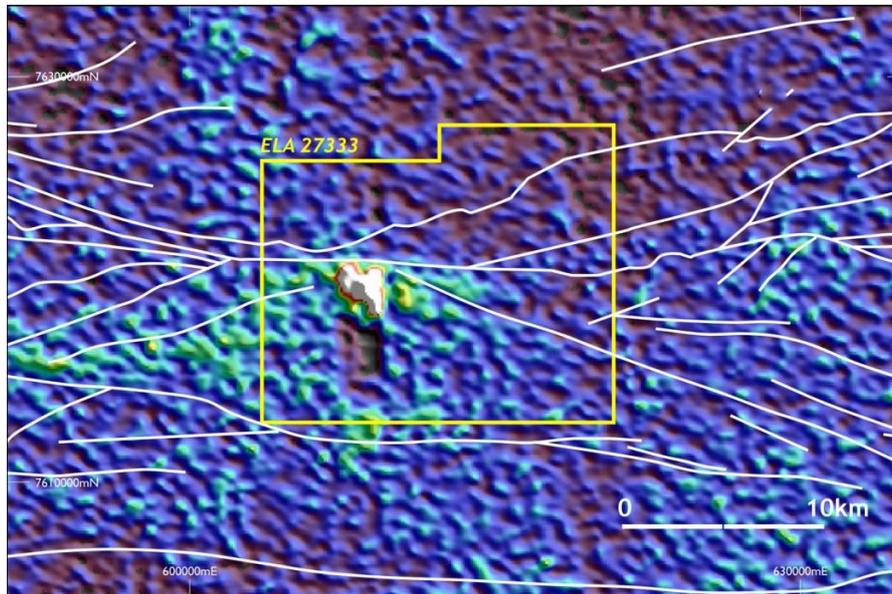
### **Regional Targets**

Numerous other historic prospects occur within the Ngalia project. Many of these prospects have had no exploration since the early 1980's. The historical information from these prospects is currently being evaluated with the intent to commence exploration at the highest priority prospects in the September quarter.

One of these prospects is the Walbiri prospect (Figure 3) which hosts a pre JORC resource and has been identified as having significant potential. Access to this prospect is dependent on the results of negotiations with the traditional owners with a survey being conducted late in the March quarter. Late in the June quarter Energy Metals was notified that the area contains several sites of significance to the traditional owners. The Company is still hopeful that it will eventually gain access to this target and community consultation is ongoing with meetings planned for the September quarter to discuss access to Walbiri and several other historical prospects identified in the 1970's and the early 1980's.

### **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 quarter the Company received advice that the Central Land Council had been authorised by the traditional owners of the region to commence negotiations with the aim of developing an access agreement for Macallan. Once the tenement is granted the Company intends to undertake an initial field visit to review the potential of the discrete radiometric anomaly. Negotiations for the access agreement will continue in the September quarter.

## **WESTERN AUSTRALIA**

### **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 the March 2010 quarter, with 180 vertical holes (1,800m) drilled in higher grade zones. Downhole gamma logging of these holes returned anomalous uranium values from most holes with geochemical assaying confirming these anomalous intercepts.



**ABN 63 111 306 533**

Mid December 2010 the Company announced that the resource at Lake Mason had been increased to 9.1Mt @ 185ppm  $U_3O_8$  (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.

No exploration was undertaken during the quarter. Subsequent to the end of the June quarter the Company received notice that a revised radiation management plan for all the Western Australian projects had been approved, paving the way for exploration activities to recommence in the coming period.

#### **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)  $U_3O_8$  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 above) and takes Energy Metals' total resources in the area (reportable under JORC) to 9.7Mlb  $U_3O_8$ .

Subsequent to the end of the June quarter the Company received notice that a revised radiation management plan for all the Western Australian projects had been approved, with exploration activities at Anketell now expected to recommence in the September 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. However it appears that the main uranium anomalies are associated with mid Proterozoic age metasediments



**ABN 63 111 306 533**

unconformably overlain by younger sedimentary rocks with potential for unconformity and roll-front style uranium deposits, as well as surficial uranium mineralisation. There is no evidence of previous uranium exploration in the area. The Rawlinson project provides the Company with a low cost option to control untested outcropping uranium anomalies with the potential to represent a completely new uranium province.

Preliminary consultations with the Ngaanyatjarra Land Council covering the two main tenements have been positive. Energy Metals was expecting an access agreement for the tenements to be finalised in 2011; however this was delayed at the request of the Land Council until after a second meeting on the ground (scheduled for early 2012) to ensure all the tenements are included in the agreement. This second meeting has not yet occurred.

Negotiations are ongoing and the Company is hopeful that access for initial geochemical exploration programs will be gained before the end of this field season.

No exploration activity occurred during the quarter.

#### **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 paleochannel hosted roll front uranium deposits.

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

An initial heritage survey was undertaken by the Thalanji people following the signing of an access agreement in 2009. This survey covered a proposed aircore drill program (approximately 3,000m) designed to test for extensions to the paleochannel uranium mineralization.

Program approvals to drill test the targets are being prepared. Exploration activity during the quarter was limited to evaluating the historical exploration and developing the drill program intended to be undertaken later in 2012.



**ABN 63 111 306 533**

### **URANIUM TRADING**

On 25 June 2012 Energy Metals announced that the Amendment to the Natural Uranium Concentrates Sales Agreement had been signed with the Australian uranium producer and CGNPC-URC, respectively. The Amendment mainly stipulates a new shipping schedule. Under the Amendment, the shipping date shall occur as soon as practicable following the execution of the Amendment; however, that in no event shall the shipping date occur after 31 October 2012.

On 17 July 2012 Energy Metals announced that it had received all prerequisite government approvals for its first uranium trade. The Company is currently working with the Australian uranium producer to confirm a final shipping schedule. The Company expects the shipment will take place as agreed in the Amendment. The Company also announced that the ASX had agreed to grant a waiver from ASX Listing Rule 10.1 under the new shipping schedule.

### **BOARD RESTRUCTURE**

On 17 July 2012 Energy Metals announced that Dr Xinjian Peng and Ms Yunfei Jin were appointed Non-executive Directors following the resignations of Mr Bin Cui and Ms Xiaowei Zheng. Mr Bin Cui will remain with the Company as the Chief Financial Officer.



**ABN 63 111 306 533**

Information in this report relating to exploration results, data and cut off grades is based on information compiled by Mr Paul Dunbar and Mr Lindsay Dudfield. Both Mr Dunbar and Mr Dudfield are members of the AusIMM and the AIG. Mr Dunbar is a full time employee of Energy Metals and 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 (2004)". Mr Dunbar 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 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<sub>3</sub>O<sub>8</sub> 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<sub>3</sub>O<sub>8</sub> using calibration factors obtained from measurements made at the calibration pits. The eU<sub>3</sub>O<sub>8</sub> 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<sub>3</sub>O<sub>8</sub> 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.