



# December 2012 QUARTERLY REPORT

## About Hot Rock

Hot Rock Limited is an Australian energy company formed to develop geothermal energy in Australia and overseas.

Strategically, the Company is focussed on exploring and developing its extensive portfolio of volcanic prospects in Chile and Peru complimented with Hot Sedimentary Aquifer prospects in Australia.

The Company moved early and acquired a wholly owned portfolio of projects with good evidence for geothermal reservoirs suitable for electricity generation in countries with attractive infrastructure, markets and government policy.

## Executive Management

Mark Elliott –Executive Chairman  
Peter Barnett – Managing Director

## Hot Rock Limited

## Registered and Head Office

ACN 120 896 371  
Level 5, 10 Market Street  
Brisbane 4000  
Australia  
Phone (+61 7) 3212 6200  
Fax (+61 7) 3212 6250

[www.hotrockltd.com](http://www.hotrockltd.com)

## HIGHLIGHTS:

### Geothermal major EDC progressing with Joint Venture

- Field work by EDC progressing in Peru
- Corporate JV structure established

### Discussions advancing with major energy companies to JV on another HRL project – Achumani, Peru

- Exploration permit granted in October
- High level of interest from major companies
- Significant JV negotiation in progress

### Increasing energy demand and pricing bolstering the case for Geothermal

### Anticipated in the year ahead:

- Signing of other significant JV's in the March and June quarters.
- Continued increasing energy demand and supply scarcity in Chile and Peru

***“The interest we have received from major energy companies in wanting to work with us to develop our projects, attests to the value of HRL’s advancing portfolio.”***

*Mark Elliott, Executive Chairman, Hot Rock Limited*

---

## EDC JOINT VENTURE

---

EDC is proceeding with the Quellaapacheta joint venture (JV). Legal work continues on the transfer of the Quellaapacheta geothermal exploration authorization, currently held by Hot Rock Peru S.A. (HRP), to Geotermia Quellaapacheta Peru S.A. The latter is the JV company owned by EDC and Hot Rock Limited (HRL) and formed to explore and develop the high quality volcanic Quellaapacheta geothermal project in southern Peru.



Documentary requirements for the transfer are now essentially complete and will be submitted to the Ministry of Energy in the March quarter for the Minister to sign the transfer after which the EDC/ HRL joint venture at Quellaapacheta will formally commence.

The transfer process has not impeded field programs at the Quellaapacheta project over the past quarter as a substantial amount of geo-scientific field work has been completed by both EDC and HRL through to the close of the field season at the end of November, as discussed in more detail in the Geothermal Exploration Activities section.

The joint venture program at Quellaapacheta is divided into an exploration stage and a resource development stage. The exploration stage of the joint venture program requires EDC to fund 100% of the first US\$12 million expenditure, which includes geological, geochemical, geophysical surveys and the drilling and testing of at least one production appraisal well. Following the successful completion of the exploration stage, the resource development stage will commence, which involves completing five further production wells and all studies necessary to bring the project to financial close, where project finance documents for a first stage 50MW plant are ready to execute. This program would normally cover definitive feasibility study, environmental impact study, permitting, power contract(s) and negotiating finance. This stage is estimated to cost US\$38 million and take up to a further 2 years to complete.

Under the Quellaapacheta JV agreement, HRL will receive from EDC an initial payment of US\$0.4 million once the exploration tenement has been transferred into Geotermia Quellaapacheta Peru S.A. If EDC withdraws from the project within 6 months of the tenement being transferred into the JV Company, the \$0.4m is refundable. A further payment of US\$0.6 million will be made to HRL providing EDC continues to be involved in the project beyond 15 months from the date of the tenement transfer.

EDC is the world's largest geothermal company with over 35 years' experience in geothermal exploration, development and power generation, and currently supplies the Philippines with 1,130MWe of geothermal power from integrated steam field and power plants at five project locations. EDC is listed on the Philippines Stock Exchange (PH:EDC) and has a market capitalization of US\$2.4 billion.

---

## **GEOTHERMAL EXPLORATION ACTIVITIES**

---

### **PERU JOINT VENTURE GEOTHERMAL PROJECT (HRL 100%; pending 70% EDC)**

---

EDC requested HRL in August for entry to the Quellaapacheta project ahead of the formal commencement of the Joint Venture to allow EDC to take advantage of the 2012 field season remaining through to the end of November when seasonal snow and rains commence with the onset of the Bolivian winter. It was agreed that if EDC withdrew from the project before the JV was completed it would supply HRL the exploration data free of charge.

EDC teams undertook detailed geological and geochemical field surveys at Quellaapacheta in September / October and contracted an international geophysics company to undertake a magneto telluric (MT) resistivity survey in November (Figure 1). This resulted in 29 MT stations being measured up to the close of the field season. The field data from the MT survey are currently being processed and modeled by EDC. These will be integrated with the results from the EDC detailed geoscientific field surveys and used to guide and optimize a more detailed MT program of a further 70 stations to be undertaken in the early part of the 2013 field season, planned to commence in May.



**Figure 1:** Contract MT crew checking equipment at Quellaapacheta, Nov 2012

## **PERU GEOTHERMAL PROJECTS (100% HRL)**

---

A geothermal exploration authorization was granted to HRL in late October for the Achumani geothermal prospect, located 90km north of the city of Arequipa in southern Peru. This is a high quality volcanic geothermal prospect with similar prospectivity to the Queallaapacheta project. It has excellent surface indications for a large conventional geothermal resource at depth, such as high elevation solfataras, boiling mud pools and peripheral hot springs (Figure 2). HRL is confident that with an already high level of JV partner interest in the Achumani project, a deal should be concluded in the March quarter after which the project will quickly progress into geology, geochemistry and geophysical surveys followed by exploration drilling, with high potential for subsequent large-scale commercial field development.

The Achumani grant is another major step forward for HRL in developing its portfolio of high quality geothermal tenements in Peru, with a further four similar such volcanic prospects still in application, awaiting grant.

During the quarter HRP staff continued with community information and engagement programs at Chocopata and Turu, its two other 100% owned and granted projects in Southern Peru.



**Figure 2:** High elevation steaming ground and boiling mud pools at Achumani Project



## **CHILE GEOTHERMAL PROJECTS (100% HRL)**

---

### **Longavi and Calerías Projects**

Work on detailed definition of exploration and development requirements (costs and schedules) for both the Longavi and Calerías projects continued during the quarter, in conjunction with ongoing discussions with potential joint venture partners.

This work has included formulation of detailed specifications for geothermal development at the Longavi project within a collaborative working relationship with a Chilean commercial business development company which is assisting HRL with securing a partner(s) for funding the Longavi project from exploration drilling through to financial closure.

Work has been ongoing over the past quarter in rationalizing HRL's substantial geothermal portfolio in Chile. This includes:

- The filing of applications for five new geothermal prospect areas in southern Chile, to the south of Puerto Montt (Figure 3). These prospects are located within the southern end of the Southern Volcanic Zone of South America. They have considerable potential for high temperature volcanic geothermal systems within a particularly favorable, potentially highly permeable, structural geological regime.
- Final evaluation of the San Jorge, Tuyajto IV and Santa Macarena exploration concessions has led to the internal decision not to further pursue the exploration of these three areas due to their lower commercial prospectivity relative to the remainder of HRL's portfolio in Chile.
- A decision has been recently taken to cease work for the present time on the San Antonia and San Guillermo concessions. These are located on the north-west flank of the Copahue volcano which straddles the Chile-Argentina border. The volcano underwent a small phreatomagmatic event between December 22 and 29 which gave rise to ash eruptions and emplaced a small lava dome inside the Copahue crater. Further seismic activity has occurred as recently as 23 January 2013 suggesting the likelihood of further eruptions. Although the December eruption had no physical impact on the two HRL tenements, we are reducing our program at these tenements to a watching brief while assessing the longer term forward volcanic risk in this area.
- Ongoing submissions to and discussions with the Chile Ministry of Energy have been undertaken over the past two months in support of HRL's applications to extend the Sta Edita and Sta Alejandra geothermal exploration concessions at the Longaví project.

## **OTWAY BASIN, VICTORIA (GEP- 6, 7, 8, 9 & 23 - 100% HRL)**

---

### ***ARENA and partners***

HRL continues to work actively with the Australian Geothermal Energy Association (AGEA) and other geothermal companies in Australia in seeking funding from the recently formed Australian Renewable Energy Agency (ARENA) for advancing drilling at its Koroit Project.

### ***HRL GEP tenements in Victoria***

HRL's strategy for its GEP tenements in Victoria for the next 12 months and beyond is to continue as previously reported, i.e:



- Focus on retaining tenements where HRL has discovered and declared geothermal resources (within GEP's 23, 6, 7 and 8).
- Pursue ARENA and JV partner funding over the next 6 to 12 months as the principal means for advancing HRL's Hot Sedimentary Aquifer (HSA) projects in the Otway Basin.

---

## TENEMENTS

---

### ***Granted tenements***

HRL has progressively developed a portfolio of quality volcanic geothermal prospects in Chile and Peru with the objective of diversifying its business into conventional geothermal resource types and commercial environments outside Australia, thus providing enhanced opportunities for adding significant shareholder value.

HRL's portfolio of granted projects includes the following:

- HRL's wholly owned subsidiary Hot Rock Chile SA (HRC) has been holding thirteen granted geothermal exploration concessions covering 7 projects. Three of these tenements are included in the Calerías project and four in the Longavi project, leaving six tenements located in five other projects. With the relinquishment of the San Jorge, Tuyajto IV and Santa Macarena exploration concessions, HRL's granted concessions in Chile reduce to a holding of 10 tenements in 4 project area (Figure 3). All of these Chilean tenements are 100% HRL owned.
- HRL's wholly owned subsidiary Hot Rock Peru SA (HRP) has filed applications for exploration authorizations at ten volcanic geothermal projects in Peru of which one application (Huarajayoc) has been rejected by the Ministry of Energy and Mines. Five of these have now been granted to HRL and the earliest of these were in the first batch of grants awarded in Peru. One of these projects (Quellaapacheta) is the subject of a joint venture with EDC (70%) / HRL (30%).
- HRL has five permits granted over the major portion of the prospective Hot Sedimentary Aquifer (HSA) geothermal province in the Otway Basin in Victoria. As noted above, four of these permits have been extended for an additional year to May 13, 2013.

### ***Pending Tenement Grants***

HRL has submitted to the appropriate authorities the following tenement applications and is optimistic that at least some of these will be granted during the course of 2013:

- Chile – 12 tenement applications covering a further 9 projects are currently under technical evaluation by the Chile Ministry of Energy.
- Peru – 4 tenement applications covering a further 4 projects are currently under technical evaluation by the Peru Ministry of Energy and Mining.
- Australia – nil pending.



Figure 3: HRL's geothermal tenements applied for and/or granted in South America

**Tenement Extensions**

Two exploration concessions in Chile have been extended for a further two years - Galo (at the Calerías project) and Sta Sonia (at the Longavi project). Applications to extend two concessions for a further two years each were submitted 1 August 2012 for the Sta Edita and Sta Alejandra concessions (at the Longavi project). These are currently under evaluation by the Chile Ministry of Energy and have been the subject of recent discussions between the Ministry and HRL.

In Australia HRL's tenements in the Otway Basin, GEP - 6, 7, 8 and 9, will reach the end of a 6 year exploration term on 13 May 2012. The Department of Primary Industries in Victoria and HRL are in discussion on the renewal of all its tenements on the Otway Basin, which expire in May and November 2013.

---

**CORPORATE**

---

**Joint Venturer Partner Search**

Discussions are on going with a number of companies interested in HRL projects in Chile and Peru. HRL will inform the market of any developments which progress some of which are anticipated by the end of the March quarter.



## HRL Annual General Meeting

The 2012 Annual General Meeting for Hot Rock Limited was held on 29 November at the offices of Hot Rock Limited, in Brisbane. Ten resolutions were passed including the HRL Remuneration Report, the re-election of Mr Stephen Bizzell as a Director of the Company, approval to issue options to HRL Directors and senior staff and approval of Directors and Management fee plan.

---

## CORPORATE DIRECTORY

---

### Board of Directors - HRL

Mark Elliott Executive Chairman  
Peter Barnett Managing Director  
Mike Sandy Non-Executive Director  
Stephen Bizzell Non-Executive Director

### Company Secretary & CFO

Paul Marshall

### Issued Share Capital

Hot Rock has 331.6 million ordinary shares currently on issue and 33.038 million options.

### Quarterly Share Price Activity

	High	Low	Last
Dec 2012	\$0.02	\$0.01	\$0.013

### Registered and Head Office

Hot Rock Limited  
Level 5, 10 Market Street  
Brisbane QLD 4000  
Australia  
Phone (61 7) 3212 6200  
Fax (61 7) 3212 6250  
[www.hotrockltd.com](http://www.hotrockltd.com)

### Share Registry

Link Market Services Limited  
Level 12, 300 Queen Street  
Brisbane QLD 4000  
Phone 1300 554 474  
Fax (61 7) 3228 4999  
[www.linkmarketservices.com.au](http://www.linkmarketservices.com.au)

Please direct shareholding enquiries to the share registry