HOT ROCK LIMITED
“Driving value in clean geothermal energy”
Queensland Exploration Council
Explorer’s Investor Forum
Geothermal Energy: Set to take-off
28 May 2013
ASX Code: HRL
www.hotrockltd.com
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The information in this Statement that relates to Geothermal Resources has been compiled by Peter Barnett, an employee of Hot Rock Limited. Mr Barnett has over 30 years’ experience in the determination of crustal temperatures and stored heat relevant to the style of geothermal play outlined in this release. He is a member of the Geothermal Resources Council and the International Geothermal Association, a current board member of the New Zealand Geothermal Association, a past board member of the Auckland University Geothermal Institute Board of Studies and a current member of the Economics Sub Committee of the Australian Geothermal Association. Mr Barnett qualifies as a Competent Person as defined by the Australian Code of Reporting of Exploration Results, Geothermal Resources and Geothermal Reserves (2010 2nd Edition). Mr Barnett consents to the public release of this report in the form and context in which it appears. Neither Mr Barnett nor Hot Rock Limited takes any responsibility for selective quotation of this Statement or if quotations are made out of context.

- All amounts are in Australian Dollars (AUD) unless otherwise stated.
Growing substantial shareholder value

✓ HRL is focussed on growing shareholder value through exploring and developing its quality conventional volcanic geothermal projects in Peru and Chile

✓ A third party international government agency has completed a Master Plan for the development of geothermal energy in Peru. HRL holds 3 out of the 4 top projects listed for development in the Master Plan

✓ Already backed by world’s largest integrated geothermal company, EDC in one joint venture in Peru

✓ Reducing risk by possible access to government incentives and exploration risk insurance

✓ Growing international power markets offer higher returns than low growth markets as well as offering countries prudent energy diversification and energy security

✓ Portfolio with over 1500MWe potential

✓ In discussion with other parties to farm-out more projects
Corporate Overview as at 27 May 2013

- **ASX Code:** HRL
- **Share price:** 1.1 cents
- **Shares on issue (million):** 345.4m
- **Unlisted options (million):** 32.9m
  
  *(Exercised price 4 to 40 cents per option)*

  **Top 10 Shareholders**

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<thead>
<tr>
<th>#</th>
<th>Shareholder</th>
<th>Shares</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1</td>
<td>ELLIOTT NOMINES PL</td>
<td>23,365,782</td>
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<td>HSBC CUSTODY NOMINEES (AUST) LTD A/C2</td>
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<td>PETER RODNEY BARNETT</td>
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<td>LORRAINE JEAN ZILLMAN</td>
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<td>BARJAYE PL</td>
<td>10,376,220</td>
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<td>DOUGAL MALCOLM HENDERSON</td>
<td>10,200,000</td>
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<td>DOWNSHIRE INVESTMENTS PL</td>
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<td>9</td>
<td>RUSSELL CREAM</td>
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<td>10</td>
<td>NORMAN &amp; LORRAINE JEAN ZILLMAN</td>
<td>7,933,333</td>
<td>2.30%</td>
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</table>

- **Shareholders:** 1,241
- **Top 20 Shareholders:** 49%
- **Board & management:** 19%
- **WF Asian Reconnaissance Fund:** 5.1%

2 year Share Price History

![Graph of HRL share price history]
Board & Management

Proven team of resource project developers

Dr Mark Elliott  Executive Chairman
Economic geologist with 35 years experience in exploration, project development and mining covering minerals and energy. Experience in corporate management and resource industry.

Mr Peter Barnett  Managing Director
Career geothermalist. Former geothermal manager of Sinclair Knight Merz. 35 years experience working in geothermal exploration, development and production operations on projects with some 37% of world’s geothermal generation capacity across 24 countries.

Mr Stephen Bizzell  Non-exec Director
20 years experience in corporate finance, the energy industry and capital markets. Previously executive director of Arrow Energy. Current Chairman of Bizzell Capital, a boutique investment banking firm and funds management group.

Mr Mike Sandy  Non-exec Director
Petroleum geologist & director with over 32 years experience in building companies and energy production. Managing Director of Burleson Energy Ltd and a Non-Executive director of Tap Oil Ltd and Caspian Oil and Gas Ltd

Mr Paul Marshall  Company Secretary & CFO
Qualified accountant. 15 years in commercial roles as Company Secretary and CFO for a number of listed and unlisted companies, mainly in the resources sector.

Mr Gonzalo Salgado  Regional Manager – S America
Qualified lawyer with post graduate qualification in Public Administration. Experienced in commercial law including company formations, mergers, project finance and renewable energy legislation in South America and geothermal exploration in Chile over the past 12 years. Gonzalo was also chief of staff to the Chilean Minister of Energy in 2010-11.
Geothermal is a premium renewable in demand globally

- It is the only base-load, clean renewable technology and with the highest capacity factor.

- It has the smallest footprint and one of the lowest level costs of any renewable.

- Peru and Chile have legislation to support exploration and development of geothermal energy and want it now.

Source: Jacob Securities, 2012
Geothermal provides a natural source of steam

- Reliable, safe and clean
- Not dependent on weather
- 24hr/7days: Base-load (unlike solar, wind or hydro)
- Zero fuel cost once fuel source is developed
- “Fuel” is on-site
- Geothermal steam passed directly into a conventional turbine generator

![Geothermal Steam Power Plant Diagram](image-url)
Geothermal is a +50yrs old, proven technology which provides significant power in some countries

USA 1ˢᵗ commercial plant 1960

Philippines uses 22% geothermal power

New Zealand uses 17% geothermal

El Salvador uses 25% geothermal power
Hot Rock: Searching for the best – 2006 to 2013

- High potential in unexplored volcanic targets of the “Rim of Fire” in Chile and Peru

![Map showing geothermal potential and projects](image)
Typical volcanic geothermal model

- conform to predictable models
- exploration and development now relatively easily understood
HRL has a strong COMMERCIAL and technical focus

Volcanic systems have the best potential for technical success

Other essentials for commercial success:

✓ Low sovereign risk country
✓ Growing stable economy
✓ High growth power demands
✓ Large pipeline of new mining projects
✓ Geothermal projects with access to transmission grid

Peru and Chile tick all of these boxes:

- Democratic governments
- Economies growing circa +5%pa
- Power demand doubling in 7 to 10 years
- Chile and Peru have large mining and manufacturing industries requiring power
- Chile’s 2012 spot price for power up to $250MWe & Peru has Feed-in-Tariffs
- Extensive transmission grids

✓ HRL had a major early mover advantage
Probability of Success for Any Stage: Chile shows better results than world average. No wells drilled in Peru

- Real geothermal experience makes the difference
- Chile: 6 out of 8 exploration drilling projects have been successful
- Chile: 3 out of 3 projects have drilled successful delineation wells
  - Tolhuaca: 12 MW
  - Apacheta: 22 MW
  - El Tatio: 10MW(*)
- MT geophysical methods have improved recent drilling successes

A study by SKM for KfW was based on a detailed review and assessment of exploration and development outcomes at 94 geothermal developments around the world at 89 geothermal fields up to 2002. The data obtained from this review was input into a propriety risk model developed for the KfW study from which the probability curves were published by Barnett et al (2003).

(*) Hot Rock best estimation

Probability of success for Chile Geothermal Exploration Drilling

Estimated success for Chile Geothermal Delineation Drilling
Representative cost breakdown (20MW project)

Source: Roger Henneberger, IGA Istanbul 27 March 2013
Cost by stage (20MW project)

Source: Roger Henneberger, IGA, Istanbul 27 March 2013
HRL’s active strategies in minimizing risks

- **Experience:** HRL’s managing director has participated in the development of around 37% of the world’s current geothermal installed capacity over the last 35 years
  - 4146 MW at 26 projects associated with 1281 drilled wells

- **Independent review:** HRL resource assessments are independently reviewed and verified by international geothermal experts e.g. GeothermEx

- **Well insurance:** Munich Re and others are looking to bring a geothermal exploration and resource drilling insurance to mitigate resource risk and closing project financing into Chile.
  - Insures the thermal output of the wells
  - Estimated insurance policy cost of between 15-20% of capital cost
  - Up to 80% reimbursement of exploration costs, including insurance policy cost

- **Power price agreements:** In advanced discussion with an electricity group to execute an MOU for a PPA

- **Multiple projects:** Adopted a portfolio approach to further reduce individual project risk
Example of our success in Peru

In 2012, a 3rd party first world government completed a Master Plan for the development of geothermal energy in Peru.

- HRL holds 3 of the top 4 projects listed in the report based on MW development potential out of 61 geothermal fields.
  - Achumani 150MWe
  - Quellaapacheta 100MWe
  - Occururane 90MWe

Growing support for geothermal energy

Geothermal exploration is being held back by the cost and uncertainty of drilling wells, volatile equity markets and lack of government support. New initiatives emerging to move developments forward include:

- Peruvian government laws: Renewable energy Law 1002 (May 2008); Authorization and Exploitation Law (2010). Also the Master Plan for the development of geothermal energy in Peru (February 2012)

- Peruvian and Chilean governments looking at incentives to assist the industry

- Capital markets are looking at setting up a $500m global drilling fund for geothermal projects (From Bloomberg New Energy Finance 23 May 2013)
HRL is a large holder of projects in Chile and Peru

HRL has early mover advantage in the best emerging geothermal region in the world today, and has secured one of the largest combined geothermal footprints in Chile and Peru.

World-class projects located close to transmission grids & markets

Strong power prices

Classic high enthalpy volcanic geothermal systems
Why is HRL in Peru?

- High GDP growth 7%.
- Power demand projections require doubling of generation over next 6 years.
- Strong support for renewable power e.g.
  - Law on Geothermal Resources (July 1997) & Regulations passed in 2006 and 2010 allowing private investment to develop resources.

**Renewable energy Law 1002 (May 2008)**

- Priority connection to grid
- 20 year power sales contracts awarded by government to RE sector in a reverse auction process through bidding against other renewable projects on a sole technology basis
  - e.g. 80MW PV solar project awarded 20yr contract at US$269/MWh (Feb 2010).
- Tax benefits
- Renewable portfolio standard – 5% of all energy consumption to come from RE
HRL is partnered with EDC through to Commercial Operations at the Quellaapacheta project in Peru

- **Energy Development Corporation (EDC)** to provide up to $50m to be spent on HRL’s Quellaapacheta project in Southern Peru

The deal removes many hurdles faced by a small company:

- **Funding**: EDC to secure 70% interest in JV and sole fund exploration up to $12m and commit a further $38m for resource development drilling on each project on a pro rata basis through to financial close (subject to the terms of the EDC-HRL JV agreement). EDC’s balance sheet is a major plus when seeking development finance

- **Development expertise**: EDC has 4 operating geothermal projects and 35 years of exploration and development experience

- **Technical expertise**: EDC has over 2000 employees
Quellaapacheta Project - Granted: JV (EDC 70% / HRL 30%)
Achumani Project – Granted: 100% HRL
Chocopata Project – Granted: 100% HRL
Why is HRL in Chile?

- Very low sovereign and commercial risk
- Availability of high quality volcanic geothermal systems
- Chile is the world’s largest copper producer with high demand for power.
- Chile has the highest power costs in South America, averaging $250/MWh in 2012.
- Persistent power shortages due to increasing demand and drought.
- Large opportunities for both on-grid and off-grid power sales.
Caleras Geothermal Project – Granted: 100% HRL

- 9 groups of hot springs with discharge temperatures up to 75°C.
- Excellent geothermal development potential.
- Grid and power market present:
  - 220kVA grid interconnection within 10km
  - the very large El Teniente Cu mine 35km
- Inferred geothermal resource of 185MWe
- Potential to increase resource size with further MT resistivity survey
- Road access into resource area
- No community or access issues
Longavi Project – Granted: 100% HRL

- Extensive hot springs and sinter deposits with surface discharge temperatures up to local boiling point
- Detailed exploration surveys undertaken
- Inferred geothermal resource of 135MWe
- Potential to increase this with further MT surveys to allow for greater depth delineation to resource
- Excellent geothermal development potential.
- Grid and power market connection nearby
- No community or access issues

NW cross-section of Resource model
Why Invest in HRL?

- HRL is commercially focussed on projects in two of the fastest growing geothermal exploration regions in the world with access to volcanic geothermal systems in Peru and Chile.

- Outstanding growth potential targeting projects with 1,500MWe generation potential in Peru and Chile.

- JV on the Quellaapacheta project in Peru with EDC will provide funding of up to US$50 million.

- HRL holds 3 out of the 4 top projects listed for development in Peru’s Geothermal Master Plan.

- Technical and commercial team with impressive track record in geothermal and project development.

- Interest returning to geothermal exploration with action on Government incentives, Global Drilling Fund and Exploration Drilling Insurance to reduce project risk and attract additional funding, JV partners and mergers.