



Petratherm Ltd (ASX:PTR)

Speculative Buy

Geothermal energy: a green alternative

\$0.89

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Capital Summary

Issued Capital	57.7 m ordinary 12.56 m options
Market Capitalisation (dil.)	\$59.68m
Share Price (12/06/07)	\$0.89
52 week low	\$0.25
52 week high	\$0.96

Cash (14/05/2007) \$8.0 m

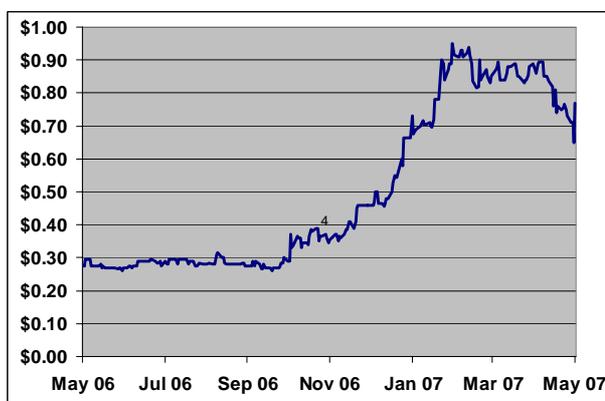
Directors

Mr Derek Carter	Chairman
Mr Terry Kallis	Managing Director
Mr Lloyd Taylor	Non-Exec Director
Mr Richard Hillis	Non-Exec Director
Mr Richard Bonython	Non-Exec Director
Mr Simon O'Loughlin	Non-Exec Director
Mr Donald Stephens	Company Secretary

Major Shareholder

Minotaur Exploration Ltd 33.9%

Share Price Graph (A\$)



Summary

Recently Petratherm has made a series of announcements that have resulted in the stock increasing in value significantly. These announcements have heralded the obtaining of funds to advance the companies flagship project and also the movement into new territories for exploration. The recent corporate developments are all value creation enterprises for Petratherm.

Key Points

- In the 1H 07 Petratherm has undertaken several key corporate developments. These developments will enable the company to position itself favourably for growth in the emerging geothermal sector, the developments have included:
 - A joint venture agreement with Beach Petroleum
 - A strategic move into Spain
 - The granting of \$5m from the Federal Government
- The focus of the company is to establish the viability of producing electricity from naturally occurring geothermal energy. The heat is drawn from the rocks by water circulated underground and extracted by a surface heat exchanger to generate electricity.
- A successful geothermal project involves the optimisation of technical and financial parameters including: the required drill-hole depth, existence of an appropriate temperature differential, suitable geology, access to market through a network connection, price available in the market and size of the available market.
- Petratherm is currently advancing the Paralana Project, their pilot geothermal program, on the western margin of Curnamona region in South Australia.
- The company announced a Joint Venture with Beach Petroleum in January 2007, in which Beach can earn up to 36% equity in the Paralana Geothermal Energy Project by expending \$30m.
- The federal Government of Australia awarded Petratherm a \$5 million Renewable Energy Development Initiative (REDI) Grant in February 2007, to assist in the establishment of Petratherm's unique Heat Exchanger within Insulator (HEWI) Model at the Paralana Geothermal Project.
- Petratherm established Petratherm España SL and made, in February 2007, two applications for highly prospective tenement holdings close to Spain's two largest cities, Madrid and Barcelona thus securing "first mover" advantage in the geothermal renewable energy sector in Spain.
- Two new geothermal exploration licences (GELs) were awarded in late February 2007 near Renmark, South Australia, being in close proximity to two major transmission lines capable of carrying in excess of 220 MW of power.

- The company has entered into an agreement to assess the geothermal energy potential of China. The project has the support of the Chinese and Australian Governments.
- Australia's rapidly emerging geothermal energy industry sector is coming of age with at least 16 hot rock companies are now operating in the sector. The growth in the number of geothermal companies means that the exploration and development of geothermal projects is now a distinct energy sector in its own right in Australia. A large portion of the companies are exploring in South Australia due to the state having a favorable geology and existing legislation for the development of geothermal resources.

Growth Potential

- The long term growth will come from the successful generation of electricity at the Paralana Project. In the more immediate time frame we feel that growth in the stock will be derived from:
 - Capitalising on the first mover advantage into Spain to expand the project portfolio
 - Rapidly establishing conventional geothermal projects in Spain.
 - The securing of a suitable drill rig to undertake the drilling of the first 4km deep hole at Paralana
 - Completion of the first deep well at Paralana

Projects

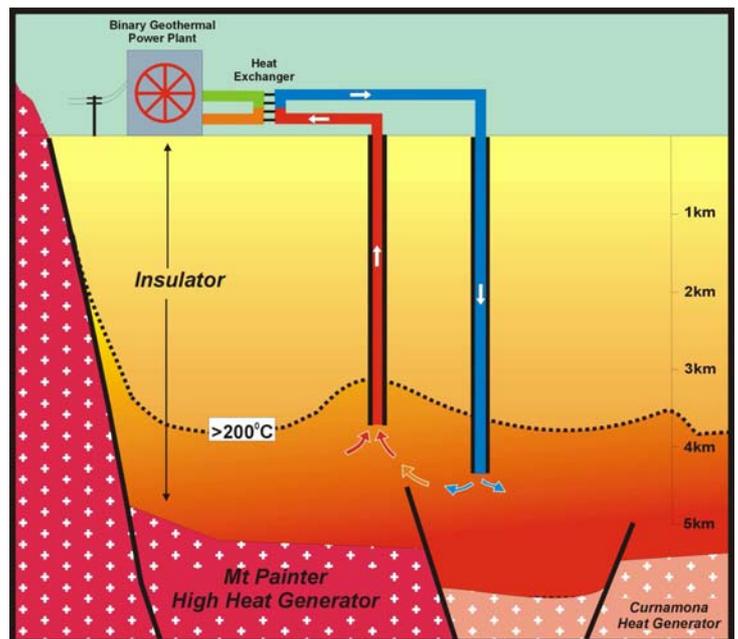
Project	Project Maturity				
	Early	Target Generation	Drilled	Geothermal resource identified	Drilling 2007/2008
Ferguson Hill					
Callabonna					
Paralana					
Spain					
China					

Paralana Project (GEL's 156,178,189,254)

The Paralana licences cover approximately 2000km², over the most prospective portion of the informally termed Poontana Basin, but also include an area to the west covering the natural radiogenic hot springs at Paralana, along the eastern margin of the Mt Painter Range. Drilling to 1807 metres has identified a large potential thermal resource at depth, with temperatures expected to be in excess of 200°C at 3.6 kilometres. The Company has stated the Paralana thermal resource has an estimated theoretical resource potential of 13,000 MWe which is approximately eight times South Australia's average daily capacity need.

The next key milestone in the commercialisation plan is to develop a fluid circulation system at Paralana. Development of the fluid circulation system will involve drilling of two wells, an injector and a producer well, to the target depth and then establishing of a robust heat exchanger (connecting fluid pathway) between the wells. Petratherm has developed a unique strategy to lower risks and costs of both drilling and circulation processes by engineering the underground heat exchanger within the insulating rocks above the high heat producing granites (the HEWI model). Contract negotiations to secure a suitable rig to undertake the drilling of first injector are well advanced.

As part of the Paralana pre-feasibility study work the company has been investigating the optimum development path for the Paralana site. Paralana is located just 11 kilometres from the Beverley Uranium Mine. The electricity needs of the mine are significant and are expected to grow substantially should uranium deposits at the nearby 4-Mile prospect be mined in the future. Petratherm plans to develop an initial small scale plant of around 7.5MW to meet the local supply



Schematic representation of the HEWI model

Development of concepts to source heat from shallower depths

Close proximity to customer, currently paying "off-grid" prices

Well design and rig selection process in progress

Experienced JV partner engaged

needs and has examined the potential for meeting growing local electricity demand of potentially, up to 30MW. An MOU has been signed with the operators of the mine, Heathgate Resources, for the provision of power to the mine, a 7.5MW plant is planned be established in the period 2009 to 2010.

In addition, Petratherm has commenced examining the potential for supplying large scale, base load power into the National Electricity Market region of South Australia and is targeting two entry points, namely Port Augusta and Olympic Dam. The large scale options, under examination include developments that range between 260MW and 520MW and potentially two high voltage transmission lines.

Paralana Project time lines

- Early 2008** - Undertake drilling of two production holes to depths of 3.5-4.0kms.
- 2008** – Create and test the underground heat exchanger
- 2009 & 2010** – Develop and commission a 7.5MW geothermal power plant.
- 2009 & 2010** – Develop a transmission line the 11kms to Beverly Uranium Mine.
- 2010 & beyond** – Staged local expansion from 7.5 to 30MW, then eventually a 250MW plant connected into the SA power grid.

Petratherm has announced a \$30 million Joint Venture agreement with Beach Petroleum on the Paralana geothermal project. The terms of the Joint Venture are:

- Beach may earn a 21% equity for a contribution of \$10,000,000 by contributing the initial \$5,000,000 in drilling and stimulating the first well, and;
- contributing the initial \$5,000,000 in drilling and stimulating the second well and circulation tests between the wells;
- Beach may earn an additional 15% equity by contributing a further \$20,000,000 following completion of drilling and stimulation of the second well and circulation tests between the wells.
- Beach may withdraw without equity after the completion of the first well;

Beach Petroleum brings to the Paralana Project a wealth of experience and expertise in drilling operations and fracture stimulation. This will be invaluable to the success of the next stage of work on the Paralana Project and is consistent with Petratherm’s continuous drive to reduce cost and risk wherever possible.

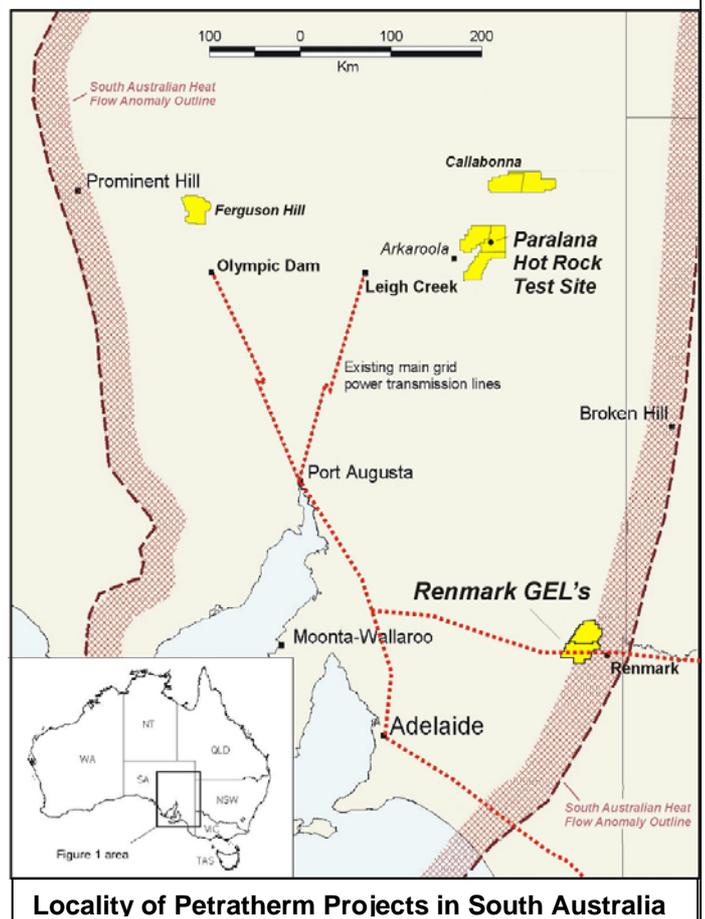
Callabonna

The Callabonna geothermal body, defined by a regional geophysical anomaly, spans an area of approximately 1200km2 immediately north-northeast of the outcropping Mt Painter and Mt Babbage Inliers. Petratherm holds two licenses covering 1000km2 over the centre of this body.

Geothermal test well, Yerila-1, was drilled in June 2005 to 693.5 metres and a temperature of 640C was measured at a depth of 675 metres. The overall thermal gradient determined from the data is at least 680C per kilometre. Based on this gradient, temperatures in excess of 2000C are possible at a depth of 3.5 - 4 kilometres, consistent with Petratherm’s business model. In June 2006 the Company undertook a trial magneto-telluric ground survey over the centre of the Callabonna body. The test work was designed to map the surface of the potential granite heat source at depth. Results from the survey defined the top of the granite body. This data along with the temperature gradient data are now being used to better constrain the thermal model for Callabonna.

Ferguson Hill

Ferguson Hill represents the informally termed Radiogenic Iron Oxide (RIO) model for hot rock geothermal energy. This exploration model targets the heat produced by naturally



occurring low-level radiogenic decay commonly associated with Iron Oxide Copper Gold bodies. The measured heat production rates associated with these bodies can be as much as 50 times greater than those from average granite. Under favourable conditions, temperatures as high as 200°C may be generated at depths of around 3km. At this stage the Ferguson Hill area remains an exploration target as the company is yet to undertake drilling at this site.

Renmark Project

Petratherm announced in February that it has acquired two new Geothermal Exploration Licenses (GELs), located 26 kilometres northwest of Renmark, in South Australia's Riverland Region. The tenements cover the prospective Renmark Trough and are ideally situated in very close proximity to two major transmission lines capable of carrying in excess of 220 MW of power.

The two new contiguous GELs cover the township of Renmark North and adjacent districts, and capture the deepest portion of the Renmark Trough, a fault bounded sub-basin of the Murray Basin System. The estimated depth to basement, based on seismic data, is about 3.5 kilometres.

Federal Government REDI Grant

In mid February 2007 Petratherm was been offered a \$5 million Renewable Energy Development Initiative (REDI) Grant by the Australian Federal Government. The grant funds have been offered to contribute to the development and testing of Petratherm's Heat Exchanger within Insulator (HEWI) Model – the next key milestone of the Paralana Geothermal Energy Project. The HEWI model which has been recognised by the Commonwealth Government as a new technique that represents a departure from existing approaches.

In addition, the Government has noted that, if proven, Petratherm's HEWI approach could become best practice and could greatly reduce cost and risk, and thereby accelerate the uptake of sustainable, large-scale, geothermal electricity generation. In the announcement the Government also noted the potential for around 10% of Australia's total electricity consumption realistically being provided by 2050 from geothermal energy.

The Government has acknowledged that Petratherm's Paralana Project would bring forward and improve the likely viability of geothermal projects across the country, notably in South Australia where a number of geothermal systems are planned. Moreover, the Government has indicated that large-scale, geothermal power plants have the potential to substantially reduce Australia's carbon dioxide emissions, while providing secure and reliable energy.

Petratherm España SL

Petratherm's activities in Spain are strategically divided into long term and short term goals. In the short term the goal is to source naturally occurring hot water to be supplied for industrial or domestic uses. Also in the short term it maybe possible to generate 'conventional' geothermal power from the shallower depths associated with the naturally occurring hot springs. The long term objective is to develop 'hot rock' geothermal power similar in concept to the Paralana Project.

The establishment of operations in Spain has provided Petratherm with first mover advantage in the Spanish renewable energy sector. A new company, Petratherm España SL has been formed in Spain to hold the new project GELs. Petratherm España is owned 93% by Petratherm Limited and 7% by Prehenita SL – a Spanish geological consulting company which has extensive knowledge of Spain's geology.

The European continent is prospective for geothermal energy – both conventional and "hot rock". Petratherm's examination of Europe's geology identified Spain as an excellent target for exploration because it has geological features capable of supporting geothermal energy from both "hot rock" and traditional volcanic sources.

The European Union (EU) member countries have legislation that underpins a very favourable commercial framework for renewable energy, including geothermal energy. Spain is a signatory to the Kyoto Protocol, a member of the EU and has demonstrated a strong commitment to the growth of renewable energy.

Petratherm is currently securing key project sites and during the March quarter secured two project areas that meet the Company's commercial criteria, adjacent to Spain's two largest cities, Madrid and Barcelona.

Federal Government has recognised the potential of PTR's projects

Spanish operations have the potential to drive PTR forward in the short term



Location of Petratherm’s projects in Spain

China

Petratherm has been successful in obtaining project endorsement from the Asia Pacific Partnership on Climate and Clean Development (AP6) to undertake a study to identify high prospect geothermal energy projects in China.

The AP6 Project is consistent with the Company’s strategy of seeking to identify opportunities where both the local geology and renewable energy policy framework is conducive for commercial geothermal energy projects.

The Project proposal involves Petratherm undertaking a study of the geothermal prospectivity of China over the next nine months, utilising Petratherm’s innovative Exploration Model to identify high quality, commercial geothermal projects. This work will be undertaken in cooperation with Chinese Geological Institutions, Provincial Governments and Utilities.

Petratherm plans to take an equity position in those projects which offer the best potential for developing commercially viable power generation from geothermal energy.

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