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Wednesday, 28 February 2007

ASX Announcement

### **Australian company in second Geothermal “hot rock” energy project in Spain - Barcelona**

Petratherm Limited (ASX : PTR) is pleased to announce that it has commenced its second Spanish geothermal energy project near Barcelona, and is already preparing applications for another two project sites.

The Barcelona project follows the recent announcement of the Company's project near Madrid and continues Petratherm's strategy of pursuing opportunities in areas where the geology, energy market and regulatory environment are conducive to commercially viable geothermal energy projects.

Spain has recently been identified by an independent study by Ernst & Young, a leading international consulting firm, as the country with the highest attractiveness for developing renewable energy projects (Refer table). The study ranked several countries and reviewed such factors as tariffs (pricing), resource potential, growth and grid capacity.

“The Barcelona project adds to Petratherm's portfolio of geothermal projects at a time when the European Union is increasing its commitment to combating climate change with proposals for further and substantial target greenhouse gas reductions, beyond those contemplated by the Kyoto Protocol,” Petratherm's Managing Director, Mr Terry Kallis, said today.

“Our Madrid and Barcelona projects have targeted Spain's two largest cities as their end use markets. The close proximity of those markets together with prospective geology and high renewable energy prices provide a strong foundation for achieving commercial viability,” he said.

“Applications for two further project sites in Spain are in process and further information on these sites will be provided pending formal lodgement of the tenement applications.”

#### **The Barcelona Project**

Petratherm has applied for two new adjacent Geothermal Investigation Licences (GILs) situated approximately 25 km north of Barcelona, Spain, through its Spanish subsidiary company Petratherm España (Refer below and to Figure 1).

The licence areas are located in the Vallés Region of Catalonia, an area of high heat flow well known for its naturally occurring hot springs, which are currently used for therapeutic bathing and the direct heating of local

communities, and thus highly prospective for both conventional and “hot rock” geothermal resources.

The two new tenements are contiguous and cover the area in and around the townships of Granollers, Sabadell and La Garriga, capturing the deepest portion of the fault bounded Vallés Basin (Refer figure 2). High heat production granites are exposed on the eastern and western sides of the basin, with an estimated depth to basement in the basin of about 3.5 kilometres. Measured shallow thermal gradients in the area are elevated and above 60 degrees per kilometre.

Petratherm’s current exploration initiative is looking to test a conventional geothermal model of directly extracting hot brine waters from aquifers near the edge of the fault zone, in addition to a “hot rock” play.

The Vallés Region is densely populated with a well developed transmission infrastructure to support its strong industrial, agricultural and tourist based economy. The tenements are ideally situated adjacent to a major transmission hub which connects five major transmission lines capable of carrying a total of around 2000 MW throughout the region and to the nearby city of Barcelona (Refer figure 2).

The tenements’ proximity to a robust market and strong transmission infrastructure, as well as the potential for natural hot geothermal waters, is expected to yield commercial advantages through improved efficiencies and minimal development engineering costs.



**Figure 1.** Locations of Petratherm’s existing geothermal project areas in Spain. Site 1 (Madrid) is approximately 50 km north-east of Madrid, and Site 2 (Valles) is approximately 25 km north of Barcelona.



**Figure 2.** Location of Petratherm’s two new tenement applications in the Vallés Basin north of Barcelona.

### **Petratherm España (Spain) SL**

A new company, Petratherm España 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 local Spanish expert geological consulting company that has extensive knowledge of Spain’s geology.

### **Geology of Spain (and Europe)**

The European continent in an overall sense is highly prospective for geothermal energy – both conventional and “hot rock”. Considerable work is now under way in Europe to explore for, and develop new geothermal energy projects.

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.

### **Spanish Regulatory Environment**

The European Union (EU) member countries have enabling 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 European Union (EU) and has demonstrated a strong commitment to the growth of renewable energy.

Spain is second only to Germany in terms of installed wind generation capacity. The Spanish Renewable Energy regulatory arrangements provide for long term (i.e. 20 years) “in feed” electricity tariffs for renewable projects with prices typically in excess of Euro €85/MWh or AUD \$140/MWh. This compares very favourably to the market in Australia where prices for renewable energy projects are typically in the range of \$75/MWh to \$85/MWh (inclusive of renewable energy certificates).

### Spain Summary Statistics

- Population of 40.3 million
- One of the fastest growing EU member countries (around 3.4% p.a GDP growth)
- Electricity Market - fifth largest in the EU with annual growth rate of 5.0%, double the EU average
- Electricity Market – around 50% thermal (coal/gas), 25% hydro, 15% nuclear and 10% renewable.

### Ranking of Renewable Energy Country Attractiveness (Source: Ernst and Young 2006)

Ranking	Country	All Renewables Index	Renewables Infrastructure Index
1	Spain	69	80
2	USA	67	70
3	Germany	62	56
4	India	61	66
5	UK	60	61
6	Italy	58	63
7	France	57	55
8	Portugal	56	63
9	China	56	59
10	Canada	55	63
11	Netherlands	54	56
12	Ireland	54	61
13	Greece	53	56
14	Sweden	52	53
15	Australia	50	51
16	Denmark	49	58
17	Norway	49	56
18	Belgium	48	53
19	Finland	38	39
20	Austria	33	49