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Spain Update - Tenerife Magneto-telluric Survey and Joint Venture Discussions

Extensive MT Survey and advanced JV discussions

Petratherm España will undertake an extensive magneto-telluric (MT) survey across the volcanic island of Tenerife in Spain's Canary Islands commencing in October 2009 to pinpoint locations for a deep test well site.

A highly regarded international specialist in this type of survey work, Geosystems, have been contracted to complete the survey work which will involve recording variations in electrical conductivity in rocks at depth. The target hot fluid areas typically have a clay cap which is more conductive and can be recognized on MT data.

Petratherm España is also holding advanced joint venture negotiations with potential partners to fund the subsequent planned deep drilling program.

Conventional volcanic based geothermal power

Petratherm España has Geothermal Exploration Licenses (GELs) on Tenerife, the largest of the seven islands in this Spanish archipelago located off the west coast of North Africa. The Canary Islands, known for their volcanism, are considered excellent sites for exploiting conventional geothermal technology. Conventional geothermal projects are commercially established in many parts of the world accounting for more than 10,000 MW of installed power generation capacity – more than three times the peak demand of the state of South Australia.

Petratherm España is undertaking the work after assessments of historical data revealed promising results for geothermal energy production.

Sinclair Knights Merz's geothermal division reprocessed limited historical magneto-telluric survey work on behalf of Petratherm España and this highlighted evidence for a potential conductive zone at depth which may represent a clay alteration cap above a hydrothermal reservoir (Figure 1).

One area identified is in the northwest of the island, near the historical Tenerife – I well, drilled by the Spanish Government. The base of this feature is at about sea level and, if it is a clay cap, would suggest that the 200°C isotherm is at about 2000m depth in this vicinity.

The historical well Tenerife-I was spud in August 1992 and was drilled to a total depth of 1060 metres. The well showed positive signs, ending in 60 metres of extensively clay altered rock which coincides with an increase in logged temperatures. The intersection of this altered zone correlates with the expected top of the interpreted hydrothermal clay cap modelled in the magneto-telluric data (Figure 1). The bottom 160 metre well section records a temperature gradient of 94 °C per kilometre (Figure 2). The indicative areas of interest are shown in Figure 3.

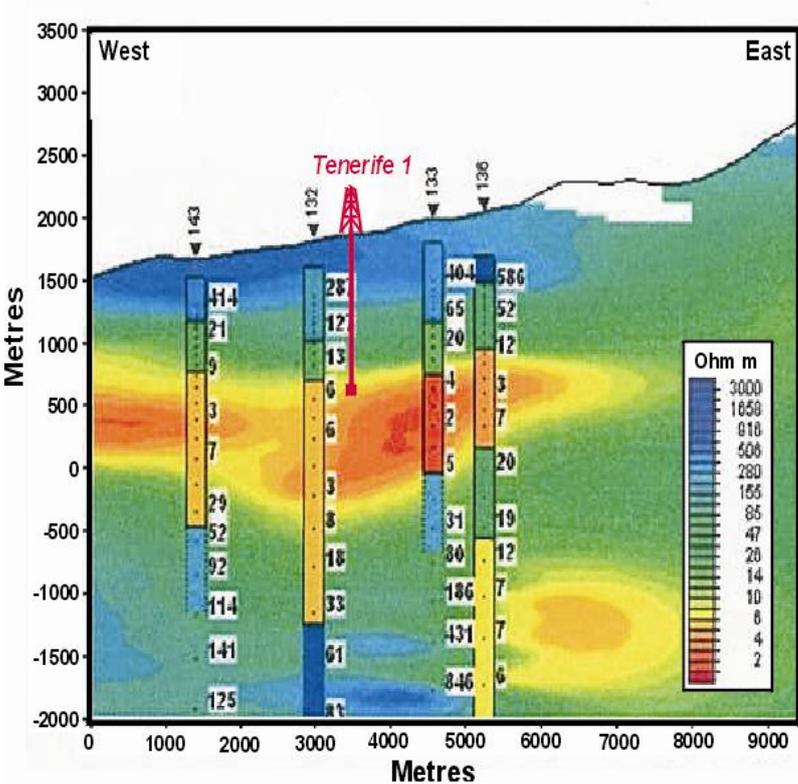


Figure 1 - W-E profile magneto-telluric pseudo-section including Tenerife-I well. Note the highly conductive layer in the vicinity of the well, which may represent a alteration cap above a hydrothermal reservoir

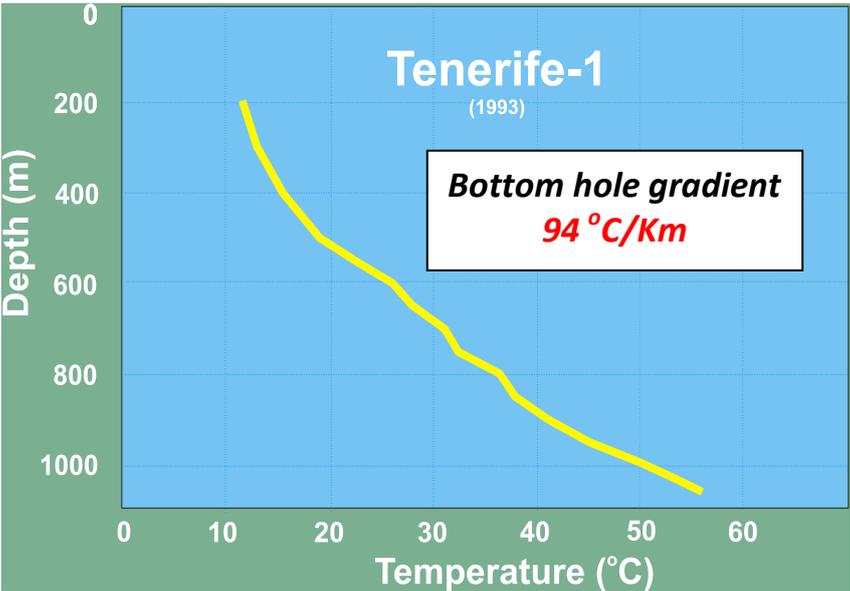


Figure 2 - Tenerife -I temperature gradient

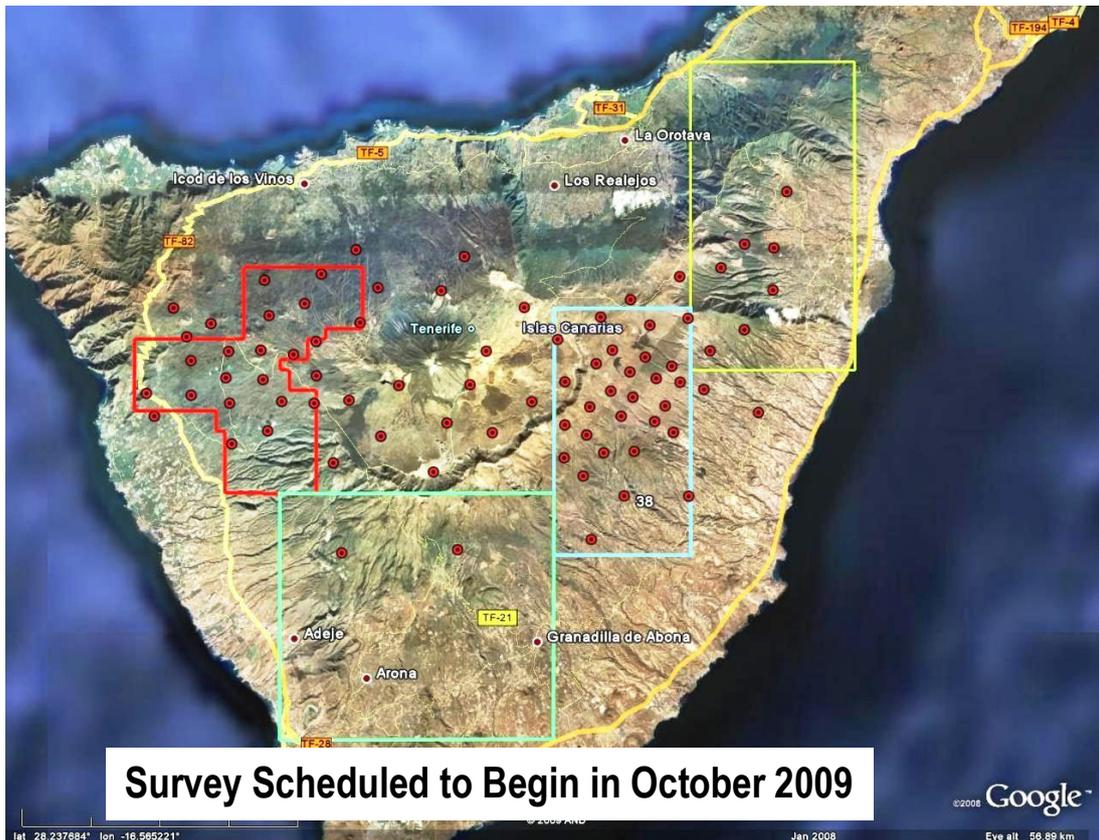


Figure 3 – Indicative magneto-telluric survey areas of interest

Large power market and nearby transmission infrastructure

Tenerife has a permanent population in excess of one million. During the peak tourist season the population can exceed one and half million placing a large demand on peak power generation, in excess of 800 MW. The island has substantial transmission infrastructure within close proximity of Petratherm España’s Geothermal Exploration Licenses (GELs).

Petratherm España’s Tenerife Project provides a major opportunity to develop a conventional geothermal power project with minimal associated technical project risk and an attractive market that is focused on the development of sustainable energy alternatives to imported fossil fuel sources.

Yours faithfully

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