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NEW TESTS PROVE PETRATHERM WELL ONE OF
AUSTRALIA’S HOTTEST ‘HOT ROCKS’ PROSPECTS

Australia’s emerging geothermal energy sector has been boosted with confirmation from new tests that a South Australian exploration well has officially recorded one of the country’s highest “hot rocks” temperatures at levels much closer to surface than previous such wells.

The Paralana-1 geothermal test well result paves the way for ASX-listed Petratherm Limited to now consider the feasibility of moving to the third stage of its project to develop a commercial geothermal resource in far north South Australia.

This stage would drill two new wells nearby to Paralana-1 but up to twice the depth of the test well, to prove up the expected thermal resource, undertake circulation tests and establish an underground heat exchanger.

Under this trial heat exchange program, water would be pumped from surface down one of the new wells and circulated through hot rocks at approximately 3.6 kilometres depth. It would then be returned to surface via the second well as superheated water able to produce steam to drive electricity generators.

The drilling and circulation work would be a precursor to developing an electricity generation plant at Paralana of around 7.5 Megawatts capacity to supply local demand.

In results released today from formal temperature tests on the latest drilling of its Paralana-1 well, 130 kilometres east of SA’s main electricity grid infrastructure at Leigh Creek – Petratherm said the well achieved the Company’s expectations of target temperatures of 200°C at a depth of 3.6 kilometres.

The tests were carried out last week after the well returned to its normal thermal or temperature equilibrium within its rock strata after being drilled a further 1300 metres deeper late in June to its second and final stage depth of 1,807 metres.

The recorded temperature in the bottom of the hole – at equilibrium - is 109°C.

“This bottom-hole temperature, known temperature gradient in this well and the thermal conductivity of the surrounding rock, has allowed us to make our first formal

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assessment of the expected temperature at a depth of 3.5 to 4 kilometres,” Petratherm’s Managing Director, Mr Terry Kallis, said today.

“Our conclusions are that an economically viable resource of 200 °C will occur at a final depth of 3.6 kilometres – well below our preferred maximum depth for creating a commercial geothermal system,” Mr Kallis said.

“The estimated average temperature gradient of 50°C is amongst the best recorded in Australia and provides a very high level of confidence for proving up a commercial geothermal resource at Paralana.

“Critically, the results endorse the appropriateness of our exploration model developed by Petratherm in conjunction with the University of Adelaide.

“This sought to optimise thermal resource targets for drilling based specifically on geologically interpreted hot granites able to support heat exchange, with adequate insulating rocks at shallow depth and close to market.

“Conventionally, site selection has been based on historic temperature readings from old oil and gas wells but these may or may not be in the most suitable hot granite environment in which to drill.”

Mr Kallis said the temperature results also provided a high level of confidence that the broader Paralana region hosted a large enough geothermal resource to allow long-term commercial development and exploitation.

“The successful temperature outcome announced today will have an immediate cost and operational benefit going forward as we do not believe that we have to now drill any deeper than 3.6 kilometres to achieve commercial conclusion,” Mr Kallis said.

“This is up to 1.5 kilometres nearer the surface than other geothermal projects in Australia and overseas and presents much more competitive development options and potentially, far fewer drilling and water circulation issues.”

Mr Kallis said Petratherm was currently negotiating with several potential partners to form a joint venture to fund and develop the trial power development program.

“Our preferred position is to more substantially advance these negotiations before the Petratherm Board makes any decision on a go-ahead for the heat exchange stage,” he said.

“It is heartening, however, that Australia’s geothermal potential is now viewed within the broader energy supply sector as a near-term, clean, greenhouse option for electricity and this has brought interest in both Petratherm and project involvement.”

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PETRATHERM – TEMPERATURE GRADIENT PARALANA-1 WELL

The diagram below summarizes the measured and expected temperatures following each stage of drilling by Petratherm of the Paralana-1 geothermal test well. Phases 1 and 2 are now complete and the Paralana Geothermal Test Well will become a seismic monitoring location reference well for future development of Paralana.