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GeoTHERM
expo & congress

Donnerstag, 29. Februar 2024, 11.50 Uhr
Baden Arena Kongress 1 – Tiefe Geothermie

Thursday, 29 February 2024, 11.50 am
Baden Arena Congress 1 – Deep Geothermal Energy

DEEP GEOTHERMAL IN THE UK : HISTORY AND FUTURE PROSPECTS



TIEFENGEOTHERMIE IN GROSSBRITANNIEN: GESCHICHTE UND ZUKUNFTSAUSSICHTEN

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Interest in deep geothermal in the UK dates back to the 1970s in response to the global oil crisis of the times.

This was initially restricted to desktop studies to classify areas of the country that may provide potential geothermal energy resources that could be developed, followed by a limited drilling campaign to investigate the Permo-Trias for heating and the Cornish granite for potential heat and electricity production.

Four deep boreholes were drilled and tested to evaluate the potential for geothermal energy in Permo-Trias at Marchwood and Southampton in Hampshire, Larne in Northern Ireland and Cleethorpes in Humberside generally referred to as low enthalpy or hot aquifer wells. In addition, a joint UK-European research programme was undertaken in Cornwall to investigate the concept of mining heat from 'hot dry rocks', now referred to as Engineered Geothermal Systems (EGS). Three deep wells in the Carnmenellis granite were drilled and extensively tested because of their above average geothermal gradient, which exists due to the continuing decay of the radium, thorium and potassium in the granite batholith.

In the 2000s, two wells were drilled in Weardale, Co Durham in the Weardale granite, which has a higher than normal geothermal gradient, similar to Cornwall. These were followed by a well in Newcastle upon Tyne drilled into the Carboniferous Fell Sandstone.

The results of these projects are summarised to provide a background to a discussion on the technical feasibility and risks of future prospects for both heating and electricity production. Geothermal potential is currently being re-evaluated as part of the UK government's Net Zero strategy, so success now, building on lessons learnt from both UK and European projects, is vital for securing geothermal's place in the UK's future energy mix.