
AuGE – Outcrop analogue studies and their application in geothermal exploration



Source: GeoThermal Engineering GmbH

Information:

www.geo-t.de

Funded by:

BMWi – Federal Ministry for Economic Affairs and Energy

Start:

August 2011

End:

January 2015

Status:

Completed

Project description

In order to minimize the exploration risk of geothermal drilling, detailed knowledge of the petro-physical properties of potential reservoir rocks are essential, for example in order to draw conclusions on expected flow rates. However, direct petro-physical measurements in several thousand meters depth are only feasible after an expensive well has been drilled.

The development of tools which allow reliable predictions of reservoir properties prior to drilling are therefore of high priority.

Outcrop analogue studies can represent a tool for the prediction of petro-physical parameters under reservoir conditions. Surface outcrops are analyzed that correspond to reservoir rocks in several thousand meters depth. The tectonic structure of the Upper Rhine Rift is especially suitable for this method. Due to the great vertical displacement along the main border faults, rocks that are buried deep in the center of the graben can be exposed on the flanks just a few kilometers from the reservoir.

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0325302

The project investigated and described the applicability of outcrop analogue studies in geothermal exploration. In the course of the studies, outcrop analogues of the rift shoulders were examined with respect to relevant reservoir properties (especially porosity-permeability properties) and their transferability to analogue deep reservoirs. In this way the spatial prognosis of such properties was improved and an effective methodological inventory for geothermal exploration was created.

The three-year research project was mainly initiated by GeoThermal Engineering GmbH. Project partners were the universities of Heidelberg, Göttingen and Erlangen as well as GeoEnergy GmbH.

Besides its own research activity in seismic attributes and their applicability in geothermal exploration, GeoThermal Engineering GmbH was taking charge of project coordination, integration of the results and validation of results in actual geothermal projects as well as further development of exploration concepts for deep geothermal systems.

The project was funded by the German Federal Ministry for Economic Affairs and Energy, identification number 0325302.

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Project partners

- University of Heidelberg
- Georg-August-University, Göttingen
- Friedrich-Alexander-University, Erlangen Nürnberg
- GeoEnergy GmbH

Company profile

GeoThermal Engineering GmbH (GeoT) is an engineering consultancy and project developer specialized on deep geothermal energy projects. The company joins a professional and qualified team of geoscientists and engineers and has established itself as a competent and reliable partner for projects in the deep geothermal market. GeoT's portfolio includes the entire project development ranging from planning to supervision of drilling work and plant operation. For international geothermal projects, GeoT is involved in several joint ventures where the company contributes skilled expert know-how. Furthermore, GeoT is integrated in several research and development projects in cooperation with well-known universities and research institutes.

Portfolio:

Exploration: geology, geochemistry, geophysics (incl. 2D/3D seismic surveys), geomechanics, hydrogeology, feasibility studies, risk analyses, exploration strategies, well path planning, well site geology

Consulting: market research, economic consultancy services, political consulting, business consultancy, due diligence, financing and funding, risk mitigation, project management, public relations

R & D: project initiation and funding possibilities, applications, project coordination, networking

– „unlocking geothermal potential“ –

