

## **EGS-related characterisation of Variscan metasedimentary rock units**

**Dr. Bernd Leiss, Co-Autoren: Bianca Wagner, Ghislain Trullenque, Albert Genter, Kristian Bär, Harald Milsch, Erik Rybacki, Yves Vanbrabant, Carl-Heinz Friedel**

Universitätsenergie Göttingen GmbH, Geothermie

**Keywords:** Enhanced Geothermal System, Variscan metasediments, petrophysics, reservoir simulation

Variscan metasedimentary units with their characteristic rock sequences and structures are not classified as potential target horizons for deep geothermal energy exploitation. However, since these units are widely distributed within central Europe and plenty of heat consumption structures are associated with these units, there is a high demand on the investigation to develop "Enhanced geothermal systems" in Variscan metasedimentary rocks. The demand for such target horizons is not only demonstrated by past projects located in Aachen and Bochum, but also for the University campus of Göttingen. There it is strongly aimed to switch from a natural gas based combined power and heat plant to a deep geothermal energy system to supply heat for the existing district heating network from a renewable energy source. The recently started EU-funded project "MEET (Multidisciplinary and multi-context demonstration of EGS exploration and Exploitation Techniques and potentials)" initiated a new approach dedicated to the quantitative characterization of Variscan metasedimentary units with their complex structural inventory. The ambition is not to only to focus on the assessment and development of specific sites, but to evaluate and develop the geothermal potential of the Variscan terrains at European scale. The Variscan metasediments consist mainly of meta-greywackes, -sandstones, -quartzites and slates, which are poorly investigated in terms of geothermal reservoir potentials. We combine existing data with data from different lab scale investigations of the physical properties with digital 3D-structure surveying at different analogue sites. In this way MEET aims to: develop conceptual structural 3D-models at reservoir scale, achieve a better interpretation of geophysical exploration data, perform realistic reservoir simulations, develop new EGS-strategies, test newly developed decision support tool dedicated to economic potential evaluation.