

Deep geothermal ground heat exchanger in salt structures - a contribution to the heat transition in northern Germany

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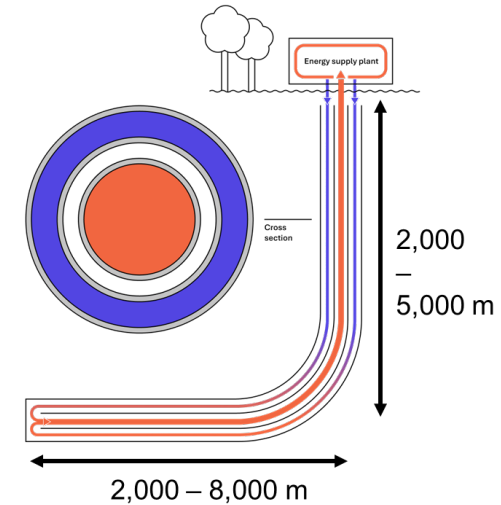
Geological setting and technical solution

Using the extensive salt deposits as heat sources



- Rock salt and salt domes offer potential for geothermal energy due to:
 - high(er) thermal conductivity
 - enhanced subsurface temperatures

Deep and deviated coaxial borehole heat exchangers with a new DualVac technology by green therma



- Vacuum isolation between inflow and outflow to reduce thermal losses
- Vertical and horizontal sections of the borehole to maximize heat exchange area

Research project UPTES

Aims:

- Investigate the potential of deep borehole heat exchangers in Schleswig-Holstein
- Development of a software package for the simulation of a deep borehole heat exchangers in salt formations

Project Result:

- Planning tool for deep coaxial borehole heat exchangers in salt structures
- Set of example configurations and settings

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(all days)

Project steps:

- Compile an inventory of geological salt structures in Schleswig-Holstein
- Set up a modelling workflow
- Simulation of deep borehole heat exchangers for selected prospective locations
- Assess long term return flow temperatures and thermal power for technical BHE variations
- Transfer of results to other potential application locations

⇒ **Talk by KG Maver in Forum 23**
(23.20.2024, 16:10, Room 241)