

ProPENS

Transforming Geothermal Failures into Sustainable Success: Utilizing Next-Generation Geothermal Technologies for Heat Supply in a Case Study from Bavaria.

Geothermal energy plays a crucial role in the energy transition, particularly in Germany's heating sector. However, the development of conventional geothermal fields often faces challenges, such as low flow rates in exploration wells, which can stall progress and even lead to project termination.

In this project, we explore next-generation multistage stimulation technologies that have the potential to turn these failures into success stories. Using a real-life case from Bavaria, we will transform a failed geothermal project into an innovative and sustainable solution.

We will guide you through the entire project cycle, from geological assessments and reservoir modeling to heat demand analysis and heating network planning for nearby communities. In addition, we will analyze project economics and address the potential challenges and risks, brainstorming solutions for overcoming them.

Research Questions:

- Can next-generation multistage stimulation technologies help meet the heat demand of nearby communities?
- How can heat demand be accurately assessed and aligned with geothermal potential?
- Is such a project economically viable?

Prerequisites: We seek a multidisciplinary team with expertise in:

- Basic geology
- Reservoir engineering and simulation
- Project economics
- Heating system networks and planning

Goals:

- Conduct a literature review on next-generation multistage stimulation technologies in geothermal fields
- Develop a project plan
- Calculate local heat demand
- Estimate geothermal field potential
- Perform project economics calculations
- Evaluate potential challenges and risks
- Present the final results

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