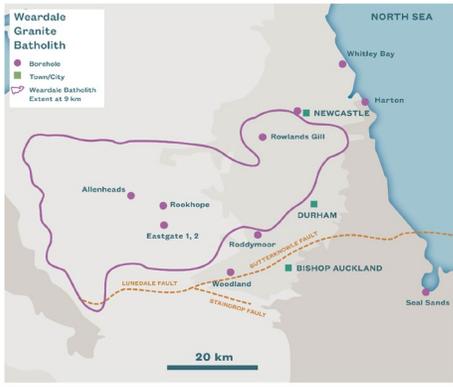


Bishop Auckland Deep Geothermal

RCEF Stage: 2



The Story

Regeneration charity The Auckland Project (TAP) is transforming the left-behind town of Bishop Auckland into a state-of-the-art visitor destination. Utilizing natural resources, a unique low-carbon geothermal heat opportunity has emerged for the town and its community that could provide heat for both public and private buildings for decades. Bishop Auckland is geologically unique to the UK, being a substantial town above a body of hot granite that generates natural, radiogenic heat. Other hot granite batholiths in the Grampians and Cornwall are below sparsely populated areas.

The study focuses on a 'deep' geothermal project with wells drilled to 5,000m that would deliver superheated steam at 160°C to the surface, allowing electricity generation via turbines. Distribution of the extracted energy is via the existing electrical grid with the option also to use the high-temperature condensed water that follows power production for district heating.

Geothermal energy offers the potential to replace gas heating for buildings and substantially contribute to net-zero targets. Heating and hot water make up c.40% of the UK's energy consumption and nearly one-third of UK greenhouse gas emissions.

Challenges & Risks

The key challenge is targeting the geothermal reservoir at depth and selecting the most suitable drill site. During the Feasibility study, 9 different sites in and around Bishop Auckland were investigated, reviewing the potential sub-surface characteristics along with proximity to grid connections and potential users for the heat network. In the UK, market failure has inhibited the rollout of deep geothermal power. To replicate the successes of other internationally mature geothermal sectors, the big challenge remains in securing capital funding for project delivery.

Lessons Learned

The review has determined that the project is technically feasible but will require financial gap-funding support to make it commercially viable. Overcoming market failure in the UK will take a combination of public sector support and investors for this dispatchable, low-carbon energy solution.

Key Facts

Name of organisation:	The Auckland Project (TAP)
Consulting Engineers:	Fichtner Consulting Engineers Ltd
Support From:	Durham Energy Institute (DEI) Geothermal Engineering Ltd (GEL)
Community Benefits:	Moves Bishop Auckland towards control of its own local energy resources - a secure, safe, sustainable, source of energy.

Key Figures

Tech type:	Geothermal Energy Generation
Energy Generation	+ 2 MWE Power output Heat output TBC
RCEF grant	£100,000

Further Notes

LEP area: County Durham

Link for further info:

<https://aucklandproject.org/>