



ACCELERATE. INNOVATE. COLLABORATE.



GETTING INTO HOT WATER

Energy costs are a challenge for everyone. But what if we could take advantage of a low-carbon, renewable energy source located beneath our feet? Is geothermal energy realistic for the Humber area, or is it just a daydream? Five companies came to the Aura Innovation Centre to try to find out.

CASE STUDY: Geothermal Energy

Part funded by



Delivered by



Supported by



THE CHALLENGE

Some like it hot.

Geothermal energy is a renewable source of energy that uses warmth from the earth to heat water, which can then be brought to the surface and used in a variety of ways. It will remain available for billions of years, can produce consistent electricity, regardless of weather conditions, and is clean, emitting no greenhouse gases. However, it currently delivers less than 0.3% of the UK's annual heat demand, and lack of information about the application of the technology means that deep geothermal is not currently factored into the UK's carbon budget or government strategies.

The potential for developing geothermal energy is huge, but lack of knowledge is a big problem. A range of academics from the University of Hull got together with a diverse collection of small businesses to explore what geothermic resources are available in the Humber region, what the potential economic, social and environmental impact would be of developing the technology, and whether it would be beneficial for companies to switch to geothermal.

THE SOLUTION

Turning up the heat.

The project worked with a number of different small businesses to get an idea of geothermal potential across a range of sectors. Patrington Haven Leisure Park is a holiday camp requiring heat for a swimming pool, a bar and a gym, Premier Plants heat greenhouses for horticulture, Ryedale Organics work in farming and waste management, The Three Trees is a care home and Walker Grain Storage handles and distributes grain.

The companies use energy in very different ways, meaning the researchers had to look at different factors for each individual case.

THE RESULT

Boiling down to facts.

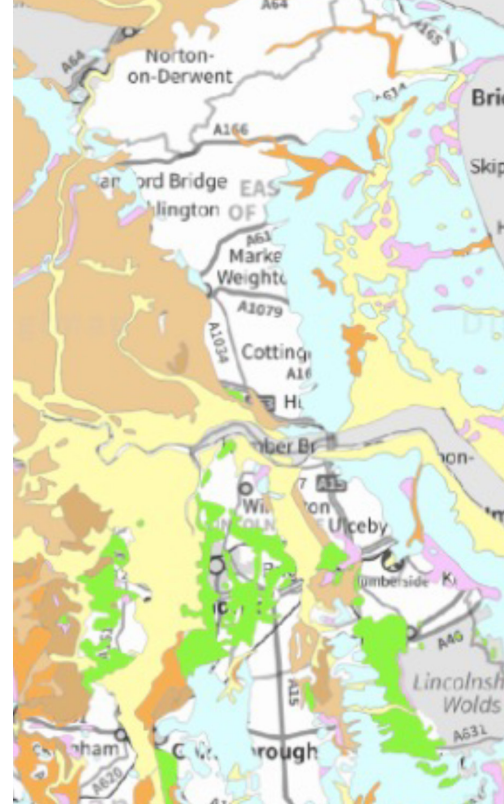
The researchers completed a full feasibility study to let the small businesses know how changing their energy mix to include geothermal could work for them.

Using data from £50 million-worth of previously prepared datasets - for example, seismic sheets and borehole information from the National Geological Society, the oil and gas industry and local authorities - the researchers could create a 3D structural model of the Humber sedimentary basin. This showed the size and scale of the Humber region's geothermic potential compared to the rest of the UK, and was the first time the geothermal resources of the East Yorkshire region had been mapped.

Individual reports were then created for each of the businesses, showing what the outlay would be to convert from hydrocarbon to geothermal power, and the potential benefits, both in money and CO2 emissions saved.

The research proves that all the small businesses would have significant carbon savings from converting to geothermal, but that the upfront costs were prohibitive without some form of government support.

The study has laid the groundwork for others to build on in future, with the SMEs currently exploring in more depth how to deploy geothermal energy within their businesses.



LEAD RESEARCHER

Professor Graham Ferrier,
Department of Geography,
Geology & Environment

FIND OUT HOW WE CAN HELP YOUR BUSINESS

Call: 01482 464 700
Email: aic.aura@hull.ac.uk
www.aura-innovation.co.uk

Aura Innovation Centre
Bridgehead Business Park
Hessle
Hull
HU13 0GD

