

Tapping into the earth's energy

GeoScience has used its unique skills set to become the UK's leading provider of geothermal heating and cooling systems

Overview

Dr Tony Batchelor is passionate about holes in the ground. Not just any old holes, but precisely drilled shafts penetrating deep into the earth's crust. He and his colleagues are convinced that these could go a long way towards solving the global energy crisis.

Dr Batchelor is a mining engineer and started his career as an academic at the Camborne School of Mines, one of the world's leading centres of earth sciences. In 1974 he published a paper describing the possibilities of using the earth's own internal heat as an energy source, and this led to a multi-million-pound research project near Stithians. In 1985 he left to set up GeoScience Ltd with the aim of developing the technology into commercial reality.



The company's geological expertise meant that its services were soon highly prized by the oil and gas industry, GeoScience continues to provide companies in this sector with engineering solutions that have enabled them to save many millions of dollars on their drilling programmes. Using some of the profits from the oil and gas side of its business, the company has developed geothermal heating and cooling systems that cut greenhouse gas emissions by up to 70% compared with conventional systems. Dr Batchelor says: "This is a market in the UK that we effectively created on our own. It's growing rapidly now, which means there's bound to be more competition. But as far as we're concerned, that's really positive."

Workforce

At any one time, several of the company's 21 staff are likely to be working away from its Falmouth headquarters on one of the many consultancy projects that it undertakes around the world each year. Sales growth in the geothermal market is likely to lead to an expansion of the workforce in the near future, and GeoScience has plans to open an additional office in the Midlands.

Clients

Recent geothermal installations include IKEA's main UK distribution centre in Peterborough and about 100 social houses, mainly in the Midlands. In Cornwall, GeoScience has designed and installed systems for several schools as well as for the Tolvaddon Energy Park, a showcase for sustainable business development in the county. The company also provides earth science consultancy to many of the world's largest oil and gas companies, including BP, Shell and TotalFinaElf.

Technology

The temperature deep below the earth's surface is more stable than at ground level – warmer in the winter and

colder in the summer. Geothermal systems involve setting up a 'loop' to redistribute heat from ground to surface or vice versa. A well is sunk and a long water-filled tube inserted into it. Fluid circulating in the loop carries heat up to warm the building, and in hot weather the process is reversed so that excess heat is drawn down into the earth.

Support

GeoScience personnel have benefited from training programmes run by Camborne School of Mines, and the company has also worked with staff and students from the Industrial Design programme at Falmouth College of Arts. Dr Batchelor says: "One of the best things about being based down here is the dynamic, creative atmosphere. We see the Combined Universities in Cornwall as very much part of that – a real focus of excellence." Dr Batchelor also speaks warmly of the positive attitude taken by Cornwall County Council and the South West Regional Development Association (SWRDA). "They've both been tremendously supportive," he says. "Not only do they listen – they'll do their best to help in whatever way they can."