Part 3: Exam practice

*Complete each sentence with the correct endings **A–F** from the box below. Note that there may be more than one correct ending for each beginning, but that you cannot use all of the endings.*

1 Geothermal Engineering ...

2 The geothermal industry ...

A	is focussing on Cornwall because of its tin and copper resources.
B	builds power stations underground.
C	plans to drill a number of wells.
D	can rely on previous research.
E	has always been a global business.
F	has not proven what it can do yet.

In the coming months, a 170-foot-high drilling rig will transform wasteground near Redruth into a new landmark. The drill belongs to a group that is planning to develop Britain's first commercial-scale geothermal plant on the site. Geothermal Engineering has chosen this part of Cornwall – once renowned for its tin and copper – because of its geology. It sits on a bed of granite whose temperature can reach 200°C. Water will be pumped deep underground and will return to the surface as steam, which will power turbines to generate electricity.

'Cornwall is a real hotspot. It is like someone has put a power station below ground and you are simply tapping into it,' said Ryan Law, founder and managing director of Geothermal Engineering.

Law, a former consultant to the geothermal industry, plans to have three wells at the plant, which together he estimates will produce 10MW of electricity, enough to power 20,000 homes, and 55MW of thermal energy, capable of heating ten hospitals 24 hours a day. The challenge is that the rock is 4.5 kilometres below the earth's surface, meaning that months of precise drilling will be required before any energy is produced. The company has a head start. In 1976, the government-funded Hot Dry Rock Research Project began deep drilling to study the area's geology. Law plans to use the detailed maps the team produced over fifteen years to direct his efforts.

Geothermal energy is not new. The world's first conventional geothermal power station, in southern Tuscany, has been producing electricity for almost 100 years. In Iceland, a quarter of the country's electricity comes from geothermal power. Investment in geothermal projects in Australia is expected to reach $2 billion (£1.3 billion) by 2014. The industry is also well established in America and Germany. In Britain, schemes are under way in Southampton and Newcastle.

Conventional geothermal power relies on naturally occurring steam pockets near the earth's surface so it tends to be confined to volcanically active regions or areas close to fault lines. Law claims the process his company uses removes this limitation, making the industry viable almost anywhere in the world.

However, despite billions of pounds in public and private investment and a raft of big projects, the industry has so far failed to demonstrate it can fulfil its promise. Critics argue it is costly, reliant on high-risk, time-consuming drilling and struggles to produce large amounts of energy capable of making a real contribution to the world's needs. Law refuses to let such doubts dampen his ambitions. 'What other renewable energy gives you 24-hour supply? The potential is enormous and we are planning another 25 plants.'

Glossary
geothermal: relating to the internal heat of the earth

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