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The UK's first deep geothermal electricity plant starts drilling in Cornwall

*The pioneering demonstration plant will deliver up to 3 MWe of electricity to the National Grid
Arup signs agreement with plant operator to secure zero carbon electricity*

St Day, Cornwall, 6 November 2018 – Geothermal Engineering Ltd. (GEL) has announced that drilling will start this week to build the UK's first deep geothermal electricity plant at the United Downs Industrial Estate near St Day in Cornwall. The aim of the initiative is to demonstrate the potential of the geothermal resource in the UK to produce electricity and renewable heat. The plant will supply up to 3 MWe (Mega Watt electrical) of electricity which is enough energy to power 3000 homes.

The global engineering consultancy, Arup, has signed an agreement to purchase renewable energy guarantee of origin certificates (REGOs) from GEL equating to 9000MWh/year. The REGO scheme is a UK Government sponsored scheme which enables companies to secure green energy for their operations. The deal will allow the firm to supply zero carbon electricity to all of its offices in the United Kingdom.

Two deep geothermal wells will be drilled into the granitic rock beneath the site, the deepest of which will reach a ground-breaking 4.5 kilometers. Water will be pumped from the deepest well at a temperature of approximately 190C, fed through a heat exchanger at the surface and then re-injected into the ground to pick up more heat from the rocks in a continuous cycle. The extracted heat will be converted into electricity and supplied to the National Grid.

The electricity and heat energy produced by this type of low carbon, renewable energy source is continuous (24/7) as geothermal energy does not suffer from the peaks and troughs that many other sustainable power sources are subject to. It is hoped that the innovative approach applied through this initiative should be repeatable at other suitable sites in Cornwall and Devon. The proposed plant is following on from the success of similar plants in Insheim and Landau in Germany.

Dr Ryan Law, Managing Director of Geothermal Engineering Ltd, said "The largely untapped geothermal resources in the UK have the potential to deliver up to 20% of the UK's electricity and heat energy needs in a reliable and sustainable way. As coal fired power stations are switched off, the need for renewable, baseload energy can only increase. It is incredibly exciting to see this pioneering project getting off the ground in what we hope will be the start of many similar initiatives across the UK."

Sarah Newton, MP for Truro and Falmouth said, "I am delighted that the United Downs Deep Geothermal Power project is now underway and bringing investment into my constituency. The UDDGP is the UK's first deep geothermal power project and, as such, will

help trigger further development of a renewable energy source beneath our feet that is available 24/7 and offers both electricity and heat. Renewable heat sources will be vital for decarbonising our energy systems and I look forward to seeing many more of these types of projects in Cornwall and beyond.”

Nigel Tonks, Arup’s UKIMEA Sustainable Development Director, said, “As well as taking responsibility for reducing their carbon emissions, companies can encourage the renewable energy market by securing low carbon renewable energy supplies. We believe geothermal energy has huge potential to contribute to the UK’s renewable energy sources and that’s why we’ve been investing in geothermal technologies since 2013. This agreement contributes significantly to our efforts to reduce the carbon footprint of our UK operations. We believe this project will stimulate the growth of geothermal plants in the UK.”

Cornwall Council Cabinet portfolio holder for planning and economy, Bob Egerton said: “This is an exciting day in a traditional mining area of Cornwall. We know that granite in some areas of Cornwall has the highest heat flow in the UK and these hot rocks have the potential to provide Cornwall with a rich source of renewable energy, as well as significant benefits to the local economy from jobs, research and investment. The Council is supporting and providing match funding for deep geothermal exploration projects like this pilot one at United Downs to help unlock the huge potential and create a new industry with huge export potential, not just for Cornwall but for the national economy.”

The project has received approximately £18 million in funding, including £10.6 million from the European Regional Development Fund, £2.4 million from Cornwall Council, £5 million from private investors through Abundance Capital. Delivery partners for this project include GeoScience Ltd, The British Geological Survey, and the University of Plymouth Sustainable Earth Institute, all working to further the viability of geothermal energy as a renewable energy resource in Britain.

About the UDDGP Project

The United Downs Deep Geothermal Power Project has been set up to explore the deep geothermal resources in Cornwall and is working towards making the county’s vision for a low-carbon energy future a reality.
www.uniteddownsgeothermal.co.uk

About Geothermal Engineering Ltd

Geothermal Engineering Ltd was established in 2008 to deliver deep geothermal heat and power projects in the UK and abroad. It consists of a team of specialised geologists and engineers focused on innovative methods of delivering sustainable energy that benefits local communities. Arup and GEL have worked together on a number of geothermal projects through a joint venture called Geon Energy; which develops and leases geothermal technology. Recent projects have included the [Jubilee Pool in Cornwall](#) and the [HALO Kilmarnock development in the West of Scotland](#).

www.geothermalengineering.co.uk

About Arup

Arup is the creative force at the heart of many of the world’s most prominent projects in the built environment and across industry. Working in over 140 countries Arup has more than 14,000 planners, designers, engineers and consultants delivering innovative projects across the world with creativity and passion.

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