

Under embargo until 8th March 2023, 00.01GMT

Geothermal Engineering secures £15 million funding from Kerogen Capital and Thrive Renewables to expand the development of deep geothermal electricity and heat production in the UK

- Investment from Kerogen Capital and Thrive Renewables PLC will fund UK's first deep geothermal plant at United Downs site in Cornwall
- The funds will be used by Geothermal Engineering Ltd to deliver electricity by 2024 as part of its mission to provide 25 MWe of baseload electricity and 100 MWh of heat energy across its geothermal portfolio by 2028, enough heat and power for 70,000 homes
- This investment fires the starting gun on the UK's growing geothermal industry. It is an important first step to the UK becoming a world leader in this exciting technology

8th March 2023, Cornwall: Geothermal Engineering Limited (GEL), the UK's leading developer and operator of geothermal plants, has obtained £15 million funding from Kerogen Capital (£12 million) and Thrive Renewables PLC (£3 million), subject to conditions. This will advance both the flagship project at the United Downs site in Cornwall and its Geogen geothermal development portfolio.

Ryan Law, Managing Director of Geothermal Engineering Ltd, said:

“Geothermal resources have the potential to produce carbon free electricity and heat 24/7 within UK borders and we are delighted to welcome this further investment in our journey to realising the huge potential of this important renewable energy source.

“We are excited to work with both local and national Government to maximise this opportunity and make the UK a world leader in geothermal energy. With its mining and industrial heritage, and geological expertise the UK is well placed to succeed.

“Alongside geothermal power and heat production, our trials at site suggest that there is also the opportunity to develop a strong, zero carbon domestic lithium industry linked to the power plants.”

Rt Hon Graham Stuart MP, Minister for Energy Security and Net Zero, said:

“Geothermal energy holds enormous untapped potential as a renewable energy source, with the ability to generate around-the-clock power and heat for UK households.

“This investment will help the UK realise the potential of this exciting resource, providing skilled green jobs and supporting local industry in Cornwall, while helping to deliver a cleaner energy future.”

The new funding will be used to complete power production at the United Downs plant by 2024, as well as prepare new geothermal sites in Cornwall which have recently received planning permission. In total, the investment will help to initiate 25 MWe of renewable electricity and 100 MWth of renewable heat across GEL's portfolio by 2028.

Kerogen Capital, a private equity firm focused on international energy, will fund the investment through its dedicated energy transition platform, CelerateX. The investment is the latest in a string of investments it has made into geothermal developers and projects across Europe, building a leading portfolio in this emerging technology.

In addition to the current funding, renewable energy investment company, Thrive Renewables, made its first commercial investment of £3 million into United Downs in January 2020 to support final testing of wells at the site, as well as £0.47 million in 2021 to fund planning applications for additional potential geothermal sites.

United Downs and future projects

The United Downs project is expected to start producing power in 2024 and represents the UK's first integrated deep geothermal power and heat project. The first plant will deliver 2MWe of baseload electricity and up to 10MWth of zero carbon heat to be used in a large housing development at [Langarth, being developed by Cornwall Council](#). GEL successfully drilled and tested two wells at United Downs in 2019 and 2020, including a production well drilled 5km underground.

Beyond United Downs, GEL is also developing new geothermal projects across the county, each anticipated to deliver 5 MWe of baseload power and 20 MWth of renewable heat energy for the local area. The new plants will each take approximately 36 months to complete and together will produce enough electricity to power over 70,000 UK homes.

Geothermal in the UK

The UK has significant geothermal resources which, if harnessed, can play an important role in both the UK's energy security and its transition to net zero. Geothermal technology offers a homegrown, low carbon and sustainable form of energy. Crucially, this technology is capable of generating 24/7 baseload power, enabling the UK to diversify its energy market whilst providing large scale and predictable capacity. Furthermore, the ability to feed into local heating networks for residents provides a solution to the UK's longstanding challenge of decarbonising heat.

The development of the UK's geothermal industry will benefit local communities by attracting new business, jobs and inward investment. The Renewable Energy Association and Arup have estimated* that the development of deep geothermal projects in the UK could fulfil the UK's entire residential demand for 100 years and create as many 10,000 direct and 25,000 indirect jobs by 2050.

Lithium discovery

GEL has also found significant concentrations of lithium within the deep geothermal fluid at United Downs and is working with partners to trial direct extraction (DLE) technology to extract this key battery mineral.

This discovery demonstrates the potential of geothermal to help drive the growth of a domestic lithium industry both unlocking the UK's Net Zero goal and is aligned with the Government's recent Critical Mineral Strategy.

Jason Cheng, CEO and Co-Founder of Kerogen Capital, said:

"We are very excited to be partnering with GEL which is developing the UK's most advanced geothermal power and heat project.

"The UK has large geothermal natural resources with the potential to satisfy the UK's entire heat demand, as well as playing a significant role in decarbonising heat and power. In addition, geothermal can provide security and independence from imported energy. We believe geothermal in the UK has enormous potential to create a new industry, grow a domestic supply chain and drive employment.

"The investment in GEL represents our third in the geothermal sector, following our backing of Yeager Energy (Netherlands) and GTML (Norway). Our in-house technical and commercial expertise position us uniquely to deploy in this exciting sector."

Matthew Clayton, Managing Director at Thrive Renewables, said:

"Having provided the first commercial funding into United Downs, which has enabled it to reach the construction stage, we are delighted to make a further investment to get this ground-breaking project into operation.

"United Downs will provide vital renewable baseload power to replace coal and gas, reliable heat to the local community, and could be the start of a whole new sustainable industry across Cornwall bringing green jobs and investment into the county.

"As a pioneering clean energy investor, we are pleased to be part of this significant step in the UK's transition to a cleaner energy system."

-ENDS-

Notes for editors

* Gluyas et al., [Keeping Warm: a review of deep geothermal potential of the UK](#), 2021

How geothermal power and heat is produced by GEL

To develop each of the future geothermal power plants, two deep wells will be drilled into the granitic rock beneath the site, the deepest of which will reach around 4.5 kilometres. Water is then pumped from the deepest well where temperatures are expected to be approximately 175°C. The steam produced is then fed through a heat exchanger at the surface and water is 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. Geothermal produces low-carbon, baseload (continuous, 24/7) electricity and heat energy, and is therefore distinguished relative to other intermittent renewable energy sources.

About Geothermal Engineering Ltd

Geothermal Engineering Ltd was established in 2008 to deliver deep geothermal heat and power projects in the UK. It consists of a team of specialised geologists and engineers focused on innovative methods of delivering sustainable energy that benefits local communities. This includes the United Downs Project and Jubilee Pool geothermal project at Penzance. Up until this latest investment, the United Downs project has cost £30 million, part funded by the European Regional Development Fund, Cornwall Council and Thrive Renewables plc.

www.geothermalengineering.co.uk

About Kerogen Capital

Established in 2007, Kerogen Capital is an independent private equity fund manager focused on the international energy sector. Since inception, Kerogen has raised over \$2 billion in private equity and co-investment funds. Kerogen's investors comprise a range of blue-chip institutions including endowment funds, foundations, pension plans, fund of funds, international corporations and family offices. Kerogen committed to Net Zero Carbon in 2020 and formed CelerateX, a dedicated energy transition platform, including the former GE Equity business in Asia. CelerateX focuses on building speed and scale in the decarbonisation and sustainability sectors to accelerate the path to Net Zero.

www.kerogencap.com

www.celeratex.com

About Thrive Renewables plc

Thrive Renewables is a renewable energy investment company. Thanks to its community of over 7,000 investors – large and small – Thrive has been building and operating renewable energy projects in the UK for 29 years.

The company's portfolio currently comprises 23 operational renewable projects, plus further renewable energy and storage projects in development. With assets under management of £96 million, its portfolio of wind, solar, hydro and other clean energy projects generated over 110,000MWh of electricity in 2021.

Vision: We believe in a clean, smart energy system powered by the investment of many.

Mission: To power the transition to a sustainable energy future by helping people meaningfully connect with clean energy projects.

www.thriverenewables.co.uk

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