



EnerGeo Newsletter

Count Down Net **0** Carbon

10

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ISSUE

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CEO Message:

A positive start to 2023!

Karl Farrow
- CEO CeraPhi® Energy

Hello, from the heart of CeraPhi Energy!

The last few months, albeit hectic, have presented CeraPhi Energy with a multitude of opportunities, through business travel and trade events. Regardless of global economic and political instability, I have been welcomed with upbeat enthusiasm within the deep geothermal community worldwide. As such, CeraPhi Energy has made a positive start to 2023, receiving enormous support as a leader in our market.

Energy

As the UK continues to feel the effects of the energy crisis, we can benefit from some breathing space as the warmer months approach. Energy prices have peaked and the strategy for Government subsidies to cap the cost of energy is being extended through June, with the hope of continuing to ease the burden on many families. That said, although moving in the right direction, the UK still faces turbulent times with the average family paying more than double last year's energy bill.

Economic Outlook

The economic crisis, cost of living and food security remains a concern for most, with inflation rising and the expression "energy security and resilience" still resonating as the underlying cause.

This raises further concerns about the vulnerability of our energy and infrastructure, specifically the national grid. The heat from deep geothermal sources can play a

significant role in stabilising the UK's journey to Net Zero, yet it doesn't seem to be a part of the UK Government's core energy discussions. This was evident from CeraPhi Energy's public and private business interactions, facilitated at the recent "Future Build" Infrastructure Expo in London earlier this month.

Help on the Horizon

New opportunities are revealing themselves for the sustainable energy market, with Nuclear recently being positioned as "Environmentally Sustainable".

This brings the promise of more public funding in the coming months and will provide huge prospects for the sector.

Despite the Chancellor's recent budget announcements doing little to directly support the decarbonisation of heat, or deep geothermal, the promise of £20bn for new investment into "Low Carbon Energy Projects" over the next two decades provides hope for funding in the future.

It is somewhat disappointing to hear there was no change in UK tax structures to incentivise carbon reduction, considering record profits filed in the hundreds of billions by the Oil Majors and energy companies during this quarter.

Dissimilarly, our US friends are excelling, with ground-breaking bills such as the "Inflation Reduction Act" (IRA), aimed at incentivising carbon reduction.

The Elephant in the Room

If all this wasn't enough excitement for quarter one, the "Intergovernmental Panel Climate Change" (IPCC) released its report on the 20th of March, titled: "Urgent climate action can secure a liveable future for all" - clearly pointing fingers at the exploitation of natural resources and degradation of land.

The report quotes: "More than a century of burning fossil fuels, as well as unequal and unsustainable energy and land use, has led to global warming of 1.1°C above pre-industrial levels.

This has resulted in more frequent and more intense extreme weather events that have caused increasingly dangerous impacts on nature and people in every region of the world." Although we could say there is nothing new there... earlier this year researchers from Harvard and the Potsdam Institute for Climate Impact Research released a unique paper exposing the accuracy of previously unreported forecasts created by Exxon scientists from 1977 through 2003. This paper created a series of remarkably reliable models and analyses projecting global warming from carbon dioxide emissions over the coming decades. Specifically, Exxon projected that fossil fuel emissions would lead to 0.20 degrees Celsius of global warming per decade, with a margin of error of 0.04 degrees – a trend that has been proven largely accurate.

In Conclusion...

Although we continue to operate in a turbulent time, geothermal energy is at a crossroads. Our industry is at a tipping point with copious amounts of investment poised to enter this space. As the year advances, more commercial projects, pilots and demonstrators like our own, are due to come online, accelerating our industry's processes, placing Deep Geothermal as the only 100% clean 24/7 baseload energy.

Let's keep the momentum going as the geothermal decade moves forward...

Saving The Planet One Megawatt At A Time!

Recent News:

Executive Insight Magazine dedicates latest edition to CeraPhi Energy.

CeraPhi Energy is delighted to announce that Executive Insight magazine has dedicated its latest edition to our business and to the benefits geothermal energy is bringing to the world energy mix. Educating and inspiring readers on the copious potential deep geothermal heat brings to the renewable energy sector, Karl discusses the reliability of deep geothermal heat as a 24/7 baseload energy resource, identifying opportunities for its application within industry.

Want to read more? [View the full magazine here](#)



Signed Agreements

Contract Signed with the Net Zero Technology Centre

Words from Gary Williams, Chief Operating Officer, as CeraPhi Energy Announces NTZC contract win:

CeraPhi Energy® is delighted to announce, it has been awarded the Net Zero Technology Centre (NZTC) contract, supporting the vital proof of concept demonstrator project. The project aims to prove the viability of re-purposing existing onshore oil and gas wells which have depleted their reserves, and no longer provide economic benefit. CeraPhi Energy was chosen for the highly competitive NZTC contract, due to its innovative technologies and approaches, encompassed by the CeraPhiWell™ system.

We are pleased to confirm that a detailed agreement between NZTC and CeraPhi Energy is now complete, with work to begin on the Third Energy well site in The Vale of Pickering, Yorkshire. Already delivered to site - our purpose-built thermal testing unit will be used to run fluids through the well over several months. Through CeraPhi Energy's bespoke software, CeraPhiPro, and the unit's data gathering system, our team can clearly demonstrate the economic business case for extracting deep core thermal heat for use in commercial and residential applications.

Key stakeholders, including technical experts, academics,

and government officials, will be invited to see CeraPhi TRU and CeraPhiWell™ in situ. Alongside CeraPhi Energy, NTZC's industrial partners, Weatherfords, Genius Energy Labs and Third Energy will be in attendance, providing technical and other supporting services for the delivery of our demonstration. It is through this demonstration project we will validate the potential of turning depleted oil and gas wells into renewable resources that will heat homes and buildings for many decades.

We expect to have "boots on the ground" this month - beginning the preparation work for the 3km deep well. Soon after, we plan to rapidly move into the deployment stage of well intervention, lightweight rigs and cranes. These will support the installation of the CeraPhiWell™ system into the well.

To be able to demonstrate the operational and economic benefits of our systems is a significant turning point for CeraPhi Energy and a key milestone in our journey.

Over 600 wells in the UK have the potential for a CeraPhiWell™ system and thousands more sites could benefit. The CeraPhiWell™ approach will revolutionise carbon-zero heating - decarbonising tower blocks, hospitals, universities, and housing developments - for retrofit or new builds, and play a vital role in helping to achieve Net Zero in towns and cities.

CeraPhi Energy Signs Exclusive Collaboration Agreement with Weatherford

CeraPhi Energy and Weatherford have entered into an exclusive collaboration agreement, providing an integrated package of products and services to end users for the development of geothermal energy. Through this agreement, Weatherford will offer its global expertise in Data Acquisition, Digitalisation and Automation Services, whilst CeraPhi Energy will leverage its proven engineering and project management services to deliver enhanced geothermal technology solutions into the market. This is an exciting collaboration, with both CeraPhi Energy and Weatherford committed to expanding geothermal energy development.

Weatherford has decades of experience in geothermal projects. Dedicated to delivering innovative solutions that integrate proven technologies with advanced digitalisation. The company provides sustainable offerings for maximised value and return on investment. The initial focus of this agreement is to support CeraPhi Energy's development and existing opportunities of repurposing end-of-life oil and gas wells in the UK and USA. CeraPhi Energy's first UK commercial demonstrator is underway and is planned to be complete by July 2023.

Whilst the CeraPhi Energy team is focused on its front-end resource modelling, Weatherford will support the Digitalisation and Data Acquisition of CeraPhi Energy's patented technology. CeraPhiWell™ a closed loop downhole heat exchanger that draws up subsurface heat for different applications for scalable baseload energy. This includes:

- Low-Temperature Climatized Agriculture
- Medium Temperature Heat Networks
- Medium Temperature Heating Systems and Industrial Processes
- Desalination and Water Treatment
- Power Generation
- Green Hydrogen through Electrolysis



At the heart of CeraPhi Energy's strategy to de-risk geothermal energy scale-up, CeraPhiWell™ uses end-of-life and non-producing oil and gas wells, to demonstrate the "huge commercial potential" for geothermal energy production. In addition, CeraPhi Energy supports efforts to enable access to over 500GW of additional geothermal energy by 2050 in line with the Paris 2050 Climate Accord for carbon reduction.

Karl Farrow, CeraPhi Energy CEO, said, "This is a very exciting stage of CeraPhi Energy's commercialisation and totally in line with our strategic plan to align ourselves with serious execution and delivery partners who believe in the tremendous opportunity for Geothermal, and have the ability to scale globally.

"Scaling the geothermal opportunity is key to reducing cost and making geothermal energy the baseload energy of choice everywhere for everyone. The lessons learned, services and skills from the oil and gas service sector are key to this transition and Weatherford has been a leader in the field of innovation and technology for data acquisition from wells for many years, which is perfect for this collaboration.

"This collaboration is a natural fit and could be game-changing for geothermal's role in the energy transition, having a revolutionary impact on the onshore oil and gas sector's late life and 'orphaned' wells."

Matt Foder, Weatherford Senior Vice President of Innovation and New Energy, commented, "We believe geothermal energy will play an essential role in the energy transition and are proud to have been a leader in delivering results in such projects for more than 25 years. We look forward to collaborating with CeraPhi Energy and leveraging our proven track record of providing digitally enabled solutions to our customers to unlock even greater geothermal energy opportunities."

Environmental, Social and Governance



UN Global Compact

CeraPhi Energy is delighted to announce it has joined the UN Global Compact Network, along with thousands of companies across the globe. Committed to taking responsible business action through the alignment of common CSR objectives, the UN Global Impact Network brings together like-minded organisations, sharing the same ethical values.

Launched in 2000, the UN Global Compact is the largest corporate sustainability initiative in the world, with more than 15,000 companies and 3,800 non-business signatories, spanning over 160 countries and more than 69 Local Networks. Based on human rights, labour, environment and anti-corruption, companies in the network align their operations and strategies with the body's ten universally accepted principles. As members of the network, each company strives to take action in support of UN goals and issues, embodied in the Sustainable Development Goals (SDGs).

Last year CeraPhi Energy pledged for every business card collected at an event, a new tree would be planted. The business cards are reviewed each quarter, with the corresponding number of trees planted through the Ecologi platform.

This campaign has helped to align our values with the UN ESG goals and contributes towards our company mission to make a positive impact on the planet. As such, after connecting with 250 new professionals at local and global trade events since the campaign began, CeraPhi Energy has planted a further 250 trees across Kenya, Tanzania and Madagascar.

To find out more information on where our trees are planted and the climate projects being supported, visit our [Ecologi site](#).

Plant a Tree with CeraPhi Energy

As part of the company's commitment to sustainability, CeraPhi Energy has now donated 250 trees through the Ecologi platform as part of our "Plant a Tree with CeraPhi" initiative.



Planting trees is one of the most effective ways to address the climate crisis, maintain ecological balance, preserve wildlife habitats, and keep our global temperatures from rising above 1.5°C. Trees not only provide cleaner air and a healthier environment but also help mitigate the harmful effects of carbon emissions. **By planting trees, we can positively impact the planet and leave a lasting legacy for future generations.**

250

Exercise SWAN ENDURANCE- 30th Signal Regiment Charity Event



As a soon-to-be silver member of the Armed Forces Covenant scheme, CeraPhi Energy is an advocate for supporting the military community and its fair opportunities during and after service. Any contributions to the fundraiser will support 'The Army's National Charity' and the 'Royal Signals Charity', providing opportunities for further employment, a guarantee of appropriate healthcare, and financial assistance allowing serving soldiers and veterans access to much-needed government and commercial services.

To contribute to Exercise 'SWAN ENDURANCE', scan the QR code now.

Between the hours of 10:00 am on Thursday 20th April and 10:00 am Friday 21st April 2023, the 30th Signal Regiment, based outside of Coventry, will attempt to push a Military Land Rover over 100 miles in 24 hours in aid of charity. The event, which has never been attempted before, aims to promote Army Teamwork and physical and mental resilience.



Awards



Small Business Awards East of England

CeraPhi Energy is delighted to announce on the 17th of March, we received the "Product and Innovation Award" in a field of over a thousand contenders from the East of England region. Founder and CEO Karl Farrow collected the award on behalf of the CeraPhi Energy team, commenting "This is totally unexpected and a magnificent recognition for the efforts and achievements of our CeraPhi Energy team - a company little over two years old, now with our second award in 3 months from the region."

"Winning this award, particularly in our region where the level of technology and innovation is at its highest, and being at the heart of one of the most important renewable technology hubs in the UK is a great personal achievement and I am so proud of the whole team.

And the excitement doesn't end here... if winning the East of England awards was not enough, we will also benefit from up to £1,000 worth of marketing and media advertising, as regional winners from each category now go head to head in the Small Business Awards National Finals - held on the 18th of May at Birmingham Exhibition Centre. Nine Regional winners across England, Scotland, Wales and Northern Ireland will participate, with the overall winner being announced in the national grand final.

To stay updated with our progress, ensure you read the next edition of our CeraPhi Energy newsletter!



Recent Events

CeraPhi Energy Celebrates Its Second Strategy Day

CeraPhi Energy is delighted to announce the success of its second strategy day, hosted on 28th February 2023. Enriching the day with a multitude of experience, the whole team was in attendance along with members of the advisory board as we set out key messages and goals for the year ahead.

During the event, the team looked back on CeraPhi Energy's historical successes and challenges, identifying ways to achieve our core mission - to create a more sustainable world using Geothermal Energy as a viable energy solution. As a team, we worked to understand the importance of every role in our organisation, and how its responsibilities contribute to the overall company success. From this, the team was able to identify new ways to optimise the existing skills within the company, aligning ourselves for a big year ahead. The exciting revelations from our conversations have allowed members of the team to explore new challenges with CeraPhi Energy, realigning our company values and contributing to its growth strategy.

The day was an excellent opportunity for the team to leave their daily roles behind and focus on the bigger picture, inspiring new ideas in a way that we can develop as a key player in the energy mix. With a new, unified set of objectives, CeraPhi Energy will continue to grow into a global leader in the energy sector, with a team of passionate people at its core.

Futurebuild Review

We are delighted to announce CeraPhi Energy's recent triumph at Futurebuild 2023, London, where members of the team, Gary Williams, Karl Farrow, Holly Perdicou, Suzanne Allen, Graham Manning, Zach Chilvers and Richard Jenkins, exhibited in the UK DEA (District Energy Association) zone over a three-day show.

Futurebuild is an annual trade event where like-minded organisations come together to build a better future for the environment. The event provided a stage for sharing inspiring conversations and innovative solutions, to drive sustainable construction in the effort to reach net zero. Our very own CEO, Karl Farrow gave a presentation on the UKDEA stage, inspiring the audience to engage with the idea of Geothermal energy as a viable energy solution.

The event generated masses of interest across various sectors, with CeraPhi Energy establishing over 300 new business contacts. We are excited to see where these conversations will lead CeraPhi Energy in 2023, with some already prosperous opportunities.

FutureBuild 2023 was a great triumph and we look forward to attending next year!

futurebuild
the future of the built environment



Installed
5MW



Outgoing
25MW



Negotiating
10,134MW



CAPEX Value
£178,745,346



Tonnes of Co2
40,515



Trees Planted
250

New Projects

Harnessing the Heat from Beneath Our Feet in the Middle East

CeraPhi Energy is working with a number of operators in the Middle East, looking into viable geothermal energy solutions. The research will comprise feasibility studies, reviewing the potential benefits of repurposing existing oil and gas wells for generating geothermal energy.

CeraPhi Energy's role within these studies is to provide technical and economic evaluation, including CAPEX/OPEX estimates for the system - per well - along with its electrical life cycle cost, per kWh.

Through its findings, CeraPhi Energy will prepare detailed recommendations on how best to proceed with the future of the research project, providing clients with valuable insights to inform their decision-making. The commissioning of these studies is a testament to CeraPhi Energy's extensive knowledge in the geothermal sector and is yet another exciting project for the CeraPhi Energy team to be involved in.



Adding Geothermal to the Middle East Renewable Energy Mix



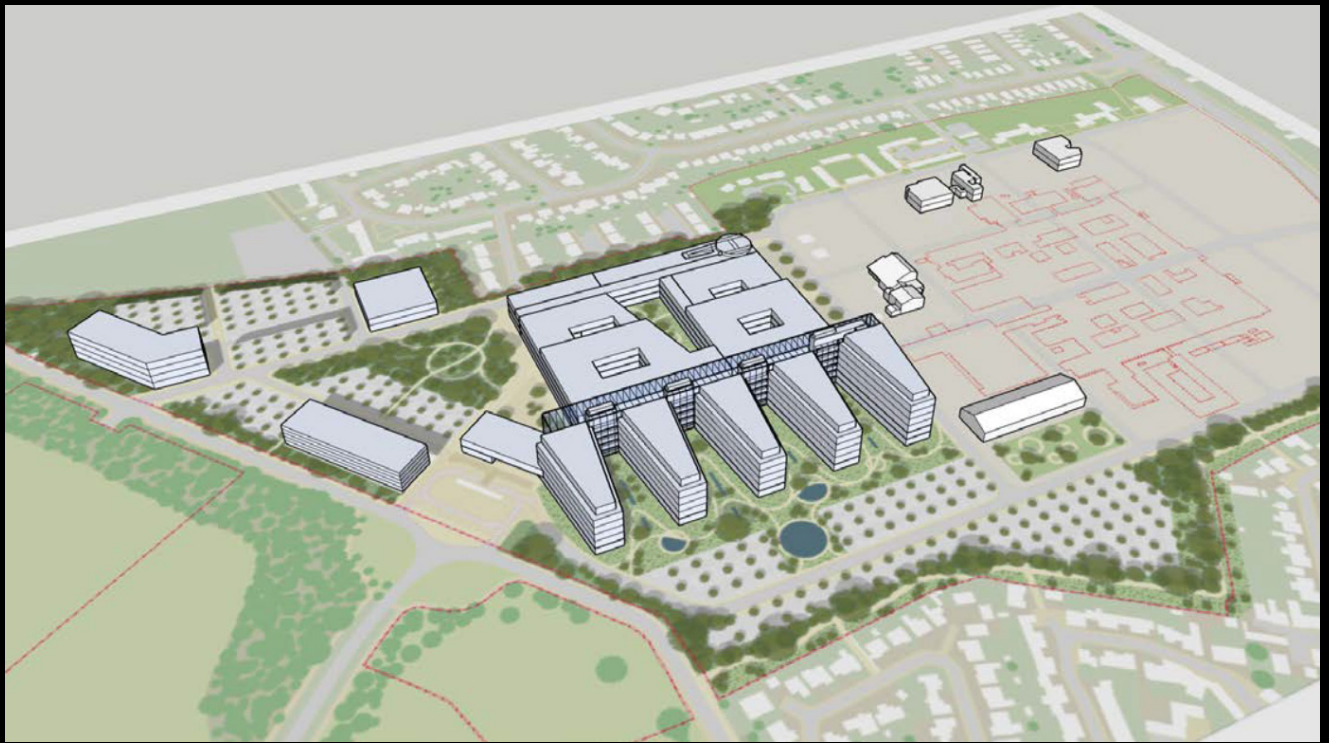
The Auckland Project

In recent events, CeraPhi Energy has been commissioned by 'The Auckland Project' to investigate ways to decarbonise Auckland Castle in Bishop Auckland, County Durham and the associated buildings on the castle grounds.

CeraPhi Energy was approached to conduct a study into the viability of using geothermal energy for the Castle's heating systems. Currently in the early stages of the research, the team is working to investigate the technical and commercial feasibility of installing a closed-loop geothermal system, using heat from the hot granite below Bishop Auckland.

Shaun Harrison, Project Manager at The Auckland Project said 'The geothermal system will allow us to start the town's journey to low carbon energy and to potentially build a new local industry. Our project team, which includes Durham University's, Durham Energy Institute, is one of the geothermal innovation projects across the North East which aims to establish the region as a centre of geothermal expertise'.

This is an exciting opportunity for both CeraPhi Energy and the geothermal industry in the North East and we look forward to continuing our work with The Auckland Project.



Architect's Illustration - New Hospital

The James Paget Hospital

CeraPhi Energy has been contracted by the James Paget University Hospitals NHS Foundation Trust to investigate sustainable geothermal energy for its new hospital in Great Yarmouth.

As part of the government programme to build 48 new hospitals by the end of the decade, the James Paget will be fully operational by 2030 - able to provide even more exemplary care and support to its community.

CeraPhi Energy was introduced to the programme after discussing its abilities to provide geothermal solutions with Jim Hackett, Programme Director of Strategic Estates, who commented: 'Central to the hospital's build is sustainable development, energy efficiency, and net zero carbon. In this regard we were fortunate to be introduced to CeraPhi Energy, discussing its unique capabilities and technology in bringing oil and gas expertise to benefit onshore applications.

The methodology adopted comprises harvesting deep geothermal heat, utilising the CeraPhiWell™ delivery solution. We have now progressed our engagement to a formal feasibility study to examine the potential for both our existing and new hospital.'

The commissioning of this study is a significant turning point for both CeraPhi Energy and the UK geothermal industry, with the potential to apply similar studies to hospitals all over the nation.

Upcoming Events



Offshore Energies UK - Exploration Subsurface Conference

Tuesday, 25 April 2023

Business Design Centre, 52 Upper Street, London, N1 0QH

CEO, Karl Farrow, will be speaking at the OEUK's, Exploration and Subsurface Conference in April. The annual event offers an invaluable chance for both industry novices and specialists to focus on the new challenges and unique opportunities facing the exploration sector as it continues to serve UK energy demand while progressing towards its ambitious emissions reduction targets.

<https://oeuk.org.uk/event/oeuk-exploration-and-subsurface-conference/>



All-Energy Exhibition and Conference - Engineering a Net Zero Future

Wednesday 10th May - Thursday 11th May 2023

Scottish Event Campus Ltd, Glasgow, Scotland, G3 8YW

All-Energy is the UK's largest low-carbon energy and full supply chain renewables event, co-hosted by Decarbonise.

The event provides a significant opportunity for CeraPhi Energy to expand its network and make connections with like-minded businesses and stakeholders in the renewable energy community.

<https://www.all-energy.co.uk/>



EEEEGR - SNS2023

Wednesday, 24 May 2023

Norfolk Showground, Dereham Rd, Norwich NR5 0TT

Time is running out to meet ambitious net zero energy goals by 2030; they can no longer be swept under the carpet or tacked on as an afterthought. 2030 takes centre stage at this year's SNS2023, the biggest celebration of energy in the East of England. It's not just renewables on the agenda. We need to look at the whole energy picture, from oil & gas right through to rapidly emerging sectors like hydrogen and CCUS. CeraPhi Energy will be exhibiting once again to highlight the importance of adding Geothermal Energy Production to create a balanced energy mix.

Come visit us at stand M4!

<https://eeeegr.com/events/sns23-vision-2030/>



Royal Norfolk Show

Wednesday 28th June - Thursday 29th June 2023

Norfolk Showground, Dereham Rd, Norwich NR5 0TT

CeraPhi Energy will be attending the Royal Norfolk Show as part of the Agri-Tech Innovation Hub, alongside some of the network's most innovative farmers, producers, scientists, technologists and entrepreneurs who share a vision of increasing the productivity, profitability and sustainability of agriculture. The show is a fantastic opportunity to educate and inspire thousands of attendees about the potential for deep geothermal heat, and how it can be applied to the sustainable energy market.

<https://www.royalnorfolkshow.co.uk/>

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