WING UK: WOMEN IN GEOTHERMAL

Part of the Global WING umbrella, we are a team of Women passionate for the development of the Geothermal Industry, who aim to offer a dedicated space where the UK Geothermal community can come together and support.

https://wing.wildapricot.org/

WING UK NEEDS YOU?

8%
Half of the world's workforce is women but only %8 of the managers are women.

22%
Only %22 of the World parliaments are women.

$1 = $0.78
Same job gets less paid to women.

61%
61% of the people agree there is a gender gap.

Women in Gothermal (WING UK)

WOMEN IN GEOTHEMAL (WING UK)

@UK_WING

WING UK GOAL

Our goal is to support and contribute to the development of Geothermal technologies and the role of women in this thriving industry.

WING UK

Exchange knowledge, supporting the development and improvement of the Geothermal technologies.

Find news and relevant information on the Geothermal activity in the UK.

Network with likeminded individuals to share experience and advice.

Advertise internship and job opportunities.

Find Match-Making Opportunities, where the solutions of one body/organization, can help another.

Join our Green Revolution!

WE NEED YOU

START NOW

BE VISIBLE

Show the industry your face, let other WINGs see you, show us the awesome work you are doing!

GO FOR THE NO

Face your fears – ask for that promotion, put your ideas forward in meetings, apply for that job! Don't stop till you hear no!

LET WING BE YOUR SOUNDING BOARD

Tell us what you want and how we can help! Ask us technical questions, career advice – we're here to support you!

TRACK EVERYONE DOWN

Encourage co-workers, students, daughters to join, including the men! We need you all!

STEP UP

Get around board tables, and into positions of influence. We need your leadership and representation in the halls of power.

"Women are the largest reservoir of untapped talent in the world"

Hillary Clinton

WING
Women in Geothermal

A New Breed to the Geothermal Landscape

Note from Helen Robinson
WING Ambassador UK and Ireland 2015 - 2019

I have been the UK and Ireland WING ambassador for the past almost 5 years. It has been a challenging and rewarding journey involving many highs and a small handful of lows. Until recently the geothermal sector in the UK has struggled and with that, gaining support and momentum for WING in the UK has been a very gradual process. I'm glad to say with the various stages of great success at UDDGP, Eden and the developments within the UK Energy Observatories in Glasgow, Cheshire and Wales, more funding for research has been made available, generating much needed interest, excitement, passion and belief in the potential pf the UK's geothermal potential.

As ambassador, I have worked hard to get the WING message out there, speaking at conferences, schools and workshops, demonstrating a passion and enthusiasm for my own interests and research in geothermal and reflecting on my experiences to support others.

I am sad to hand over the UK baton, but change is a good thing and I have no doubt Clare will do a great job during her 3-year tenure. Remaining part of the core team, I look forward to continuing to work with WING UK and Ireland and WING Global to drive the WING message and encourage more diversity in geosciences and engineering.

Excited to continuing meeting you all, working with you and supporting you.

Note from Clare Baxter
WING Ambassador UK and Ireland

When I first stepped into the commercial world straight out of University I found myself very quickly in a male dominant industry working in a very small team. At one point even being the only female in the office. It is women organisations like WING and some specific WINGmen who have played an important role in my personal and professional growth, assisted in keeping me sane and to work out how to pave my way through a male dominant business world.

A New Zealander with global experience working in geothermal, mining and environmental industries. I have been living in London, UK for two years and do a Technical Sales Advisor role for geothermal in Europe and Africa at Seequent.

WING UK can be something special! I want to thank Helen and the team before for already bringing a community of KICK ASS people (WINGmen included) who push the boundaries and have fun doing it. I look forward to see it grow and become a place of empowerment and connection not only in UK, but to the wider global WING network.

We can make WING UK be what we want in holding of the global values. I encourage you to step forward and voice any ideas you have and be active in talking about WING and what it is trying to achieve.

'Be the change you want to see' - Gandhi

GEOTHERMAL IN UK ACADEMIA

Ida Shafagh

Geothermal energy is recognised as a promising and sustainable source that can reduce current dependence on conventional fuels for thermal energy production. Although UK is amongst the very inactive countries in terms of geothermal applications there are number of research activities going on across the UK Universities exploring different aspects of this sustainable energy source spanning from exploitation, production, public and social impact, etc, aiming at enhancing the knowledge base in the UK and supporting engagement with local communities.

Geothermal Research Universities

Imperial College of London
University of Leeds
University of Leicester
University of Southampton
University of Cambridge
University of Nottingham
University of Newcastle
University of Reading
University College of London
Durham University
London South Bank University
University of Northumbria
Exeter University
Heriot Watt University
Plymouth University

If you are interested in finding more get in contact!

GEOTeCH Project

University of Leeds and University of Leicester led a Horizon 2020 funded project in collaboration with other European Universities and Industries on shallow geothermal ground source heat pump systems. The project called GEOTeCH started in 2015 and finished in April 2019 (http://www.geotech-project.eu). Academics at Durham University have been pioneering research into how warm water found in abandoned coal mines could be harnessed to provide central heating for houses. Researchers at Imperial College of London use the advanced simulation technology to model water and heat flow in geothermal reservoirs. Details of these activities and more will be published in future issues.

Lets Push Boundaries and Solve our Energy Challenges

As Horizon 2020 draws to a close there are still 51 energy call deadlines coming up, details of which can be found in http://www.accelopment.com/blog/final-energy-calls-2020-in-horizon-2020.

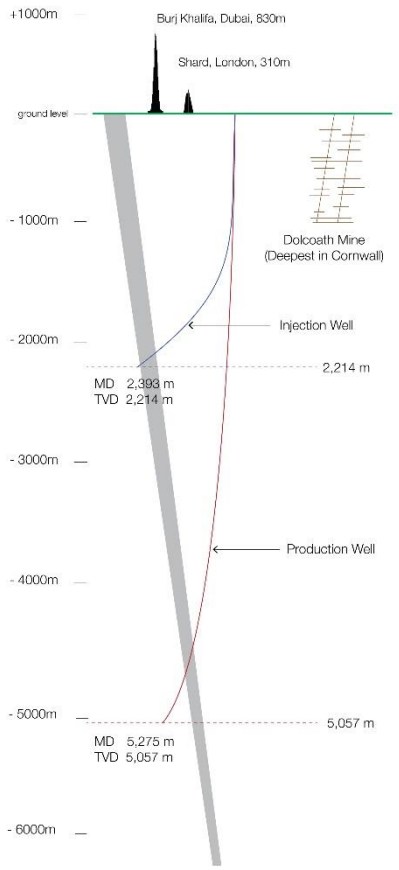
United Downs Deep Geothermal

Madelaine Constance and the United Downs Team

The United Downs Deep Geothermal Power project (UDDGP) is the first deep geothermal power project in the UK. The aim of the project is to produce renewable energy in the form of electricity and heat, through the development of geothermal resources in the heat-producing granites of Cornwall in South West England.

The project site is located within the United Downs Industrial Estate a few miles East of Redruth. The project is being developed by Geothermal Engineering Limited (GEL) and has received financial support from the European Regional Development Fund (ERDF), Cornwall Council and private investors

The project consists of two deep wells drilled into Permian age granite belonging to the regional scale Cornubian batholith that underlies Cornwall. The granite is heat-producing and so provides elevated heat flow values up to +125mW/m^2 in Cornwall, compared to the UK average of 54mW/m^2. Surface heat flow values at United Downs are expected to be ~120mW/m^2, therefore offering great potential for the exploitation of geothermal resources.



Both wells intersect a sub vertical, inactive fault structure known as the Porthtowan Fault which is situated around 800m to the South West of United Downs site and estimated to be around 300m wide. This is a >15km long NNW-SSE oriented complex strike-slip fault zone of Variscan age. The permeable fault structure is known to be associated with episodic fluid transport since the Permian as well as contemporary groundwater circulation to several km depth. Fluid will be circulated between the shallower injection well and the production well situated more than 2km directly below it.

Project Aims

The initial aim of the project is to produce 1MW electricity which will be supplied to the grid and is enough to provide for 1500 homes; this will serve as a demonstration project. If testing indicates the wells can provide more than that, the size could be increased to 3MWe which is the limit of the available grid connection.
The final power plant design will be confirmed once testing is complete, but it is thought that it will be a binary power plant.

Achievements So Far

The drilling of the two deep wells was completed in June 2019. The doublet system consists of a deeper well UD-1 drilled to a depth of 5275m MD which is the deepest onshore well in the UK, and the shallower well UD-2 drilled to a depth of 2393m MD. The bottom hole temperature of UD-1 is ~190°C and it is expected that water will be delivered to the surface at around 175°C. Circulation rates are expected to be between 20 and 80l/s.

What is Next

Following completion of the drilling of the two deep wells, GEL will now enter the third phase of the project; evaluation. Preliminary results from the drilling period are very promising; both wells intersected the fault structure at the predicted depth and the temperature at the bottom of UD-1 is as predicted. A workover rig will be mobilised to the site in January 2020 and a testing programme will commence which will see a series of measurements and hydraulic tests performed. These tests will evaluate the fault structure, assess the condition of the wells and allow for an estimation of the amount of geothermal energy that can be sustainably harnessed from the system.

The Future

The project looks to prove the technical and commercial viability of a novel concept in harnessing deep geothermal energy in a non-conventional, tectonically stable region. It is hoped that the success of the UDDGP project will encourage the investment necessary for the development of the geothermal industry in the UK and encourage other non-conventional geothermal developments around the world.

one and all onen hag oll
CORNWALL COUNCIL

European Union
European Regional Development Fund

UNITED DOWNS
DEEP GEOTHERMAL POWER

To find out more about the United Downs Deep Geothermal project head to uniteddownsgeothermal.co.uk

WING UK COMMUNITY!

Each newsletter we want to share something about our WING members to let us get to know each other. If you want to share a bit about yourself please send through a blurb and a photo about you.

Sarah Magor

I'm originally a Chemist with some geology thrown in, with a grounding in analytical chemistry and a career has meandered through ecotoxity studies, soil &groundwater assessment, contaminated land assessment & remediation and then a chance to work on geothermal plants in NZ as an Environmental Adviser. I remain passionate about science, supporting the RSC Outreach/STEM and I'm still a rock geek (boxes of rocks in my shipping evidence that!). I'm lucky now to have returned to Cornwall with a kiwi springer spaniel, have volunteered at the Eden Project and am now working for Saputo Dairy as Environmental Lead at Davidstow.

Dr Ida Shafagh

Currently a researcher at the University of Leeds, I am a mechanical engineer by background with a PhD in computational chemistry and mathematical modelling. I was introduced to the field of geothermal energy in 2015 and since then have been working on various related projects. My research focuses on heat transfer analysis of shallow geothermal, however, I would like to expand it to other aspects of this interesting field as well as deep geothermal.

Diana Cruz

Over 7 years' experience in water treatment from a chemical background, my contribution to this industry is on the management of geothermal fluids to control scale and corrosion on geothermal systems, for improved plant efficiency and well life. I am passionate about helping people from different industries to find common ground and work together to develop a more sustainable and environmental Geothermal operation.

Madelaine Constance

Working as a technical assistant for GeoScience Ltd as part of the United Downs Deep Geothermal Power Project- the first of its kind in the UK! Eager to learn and challenge myself within my field of interest and continue to support the development of the UK geothermal energy industry through my position at GeoScience Ltd and involvement with WING UK.

If you want to share your activity with the WING UK community or want to be a part of the organising committee please reach out to Clare Baxter at clare.baxter@seequent.com