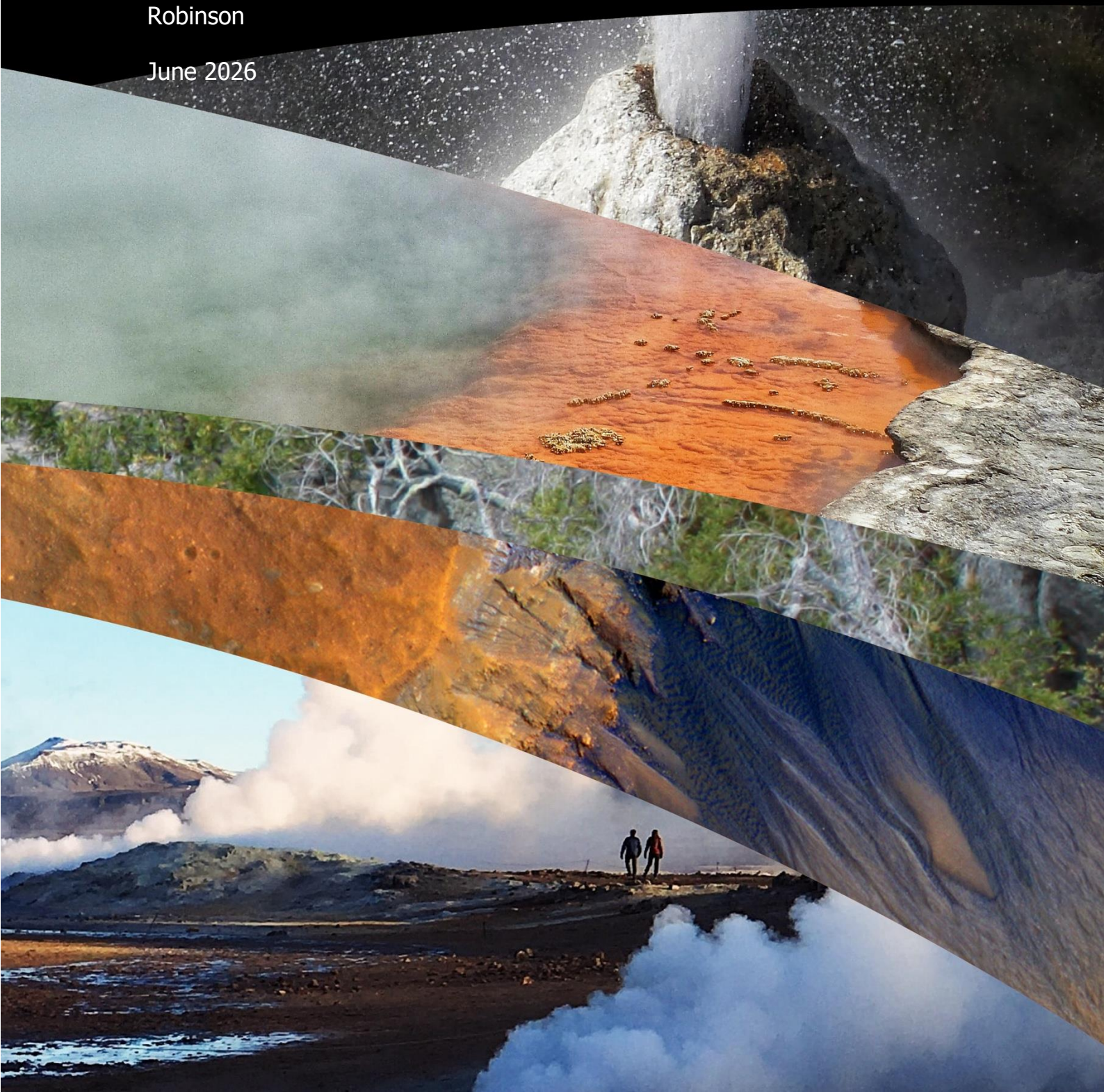


2025 United Kingdom Country Report

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Report details

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1. Introduction

This report provides an update for the development of geothermal energy activities and projects in the United Kingdom in 2025.

Table 1 summarises the geothermal energy usage in the UK for the calendar year 2025. The largest installed capacity is from small-scale (<50kW) ground source heat pumps (GSHP) domestic and light commercial users (832 MW). A notable increase in the number of larger capacity GSHP projects is evidenced in grant fund awards, by companies on their websites and social media, and at conferences/webinars. An estimate of installed capacity is provided from those reported as operational, from data on borehole exchanger length (closed loop) and from regulators abstraction licensing data with 'heat pump' listed open loop totalling 76.7 MW from 130 projects. This is an underestimate, as many reports do not provide any information. An additional 8.41 MW comes from assuming the heating part of 11 Aquifer Thermal Energy Storage (ATES) systems reported by Jackson et al. (2024) are operational, and the inclusion of 7 operational mine water geothermal projects (9.7 MW). The direct use installed capacity has increased from 2024 because the Southampton geothermal well has been reported as operational once again.

In 2025, the construction and commissioning of the UK's first geothermal power plant at United Downs in Cornwall was ongoing for production of power from granite rocks, along with construction of a demonstration-scale lithium extraction plant (Olver et al. 2025a).

Table 1 Geothermal energy usage for the calendar year 2025.

Electricity		Heat	
Total Installed Capacity (MW _e)	0	Direct Use: Total Installed Capacity (MW _{th})	4.4
New Installed Capacity (MW _e)	0	Direct Use: New Installed Capacity (MW _{th})	0
Total Running Capacity (MW _e)	0	Direct Use: Total Heat Used (GWh/yr) <i>Estimated</i>	25.5
Contribution to National Capacity (%)	0	Mine Water Geothermal: Total Installed Capacity (MW _{th})	9.7
Total Generation (GWh)	0	ATES (heating part) Total Installed Capacity (MW _{th}) from Jackson et al. (2024)	8.41
Contribution to National Generation (%)	0	Large-scale (>50 kW) GSHP Total Installed Capacity (MW _{th}) <i>Estimated minimum</i>	76.7

		Mine water, ATES, Large-Scale GSHP (>50 kW): Total Net Use (GWh/yr) <i>Estimated minimum</i>	169.3
		Total Installed Capacity Heat Pumps (MW _{th}) (<50 kW)	832 [#]
		Total Net Heat Pump Use (GWh/yr) (<50 kW)	1080 [#]
		Total Installed Capacity Heat (MW_{th})	931.2
		Total Heat Used (GWh/yr) <i>Estimated minimum</i>	1320.4
		Target (PJ/yr)	No target

(N/A = data not available).

[#]Heat pump data are calculated using BSRIA and HPA information regarding sales of heat pumps. The heat pump data includes only ground source heat pumps whereas figures previous to 2024 have included water source heat pumps. These figures are for small domestic (<6 kW) to light commercial (up to 50 kW). In calculating the net GSHP use it has been assumed that the hours per year heating equivalent full load is 1912 h/year. These figures are consistent with data provided for the UK's Annual Renewables Questionnaire submitted to the IEA in September 2025.

Mine water, ATES and some >50 kW GSHP taken from reporting numbers, alongside estimates from reported closed loop borehole heat exchanger lengths and open loop abstraction licence data for heating. Numbers are known to be underestimates. Assumed operational hours per year: 1500 for space heating domestic, 1800 for space heating commercial, swimming pools 5431 hours – as used in IEA reporting spreadsheets, 6000 operational hours for heat networks and 5256 hours for hospitals as in Arup/DESNZ (2025). Heat value for closed loop borehole heat exchanger 32 Wm⁻¹ as this is the average UK value from UK Geothermal Platform closed loop summary calculation (Lawley et al. 2025). Calculation for open loop from abstraction licence data assumes operation at licenced value and 1800 operational hours per year.

2. Changes to Policy Supporting Geothermal Development

England and Wales

In December 2025, the Public Sector Decarbonisation Scheme (PSDS) Phase 4 projects awarded funding was published. The PSDS provides grants for public sector bodies to fund heat decarbonisation and energy efficiency measures. Four geothermal projects were awarded funding. University of York has been awarded £35m to support the decarbonisation of multiple buildings across its main campus in York. Most buildings will be connected to an on-site geothermal heating network, while others will link to the existing district heating system. Countess of Chester Hospital NHS Foundation Trust has been awarded £24m to support the decarbonisation of Countess of Chester Hospital in Chester. All gas boilers across the site will be replaced with ground source heat pumps, which will provide geothermal energy to support the heating for the entire site. University Hospitals Birmingham NHS Foundation Trust has been awarded £14m to install a ground source heat pump in the Queen Elizabeth Hospital Birmingham's Acute Building. Nottingham University Hospitals NHS

Trust has been awarded £36m to support the decarbonisation of Queen's Medical Centre. The main hospital building will be connected to an onsite heat network, and [four ground source heat pumps](#) will also be installed.

In August 2025, the Heat Networks Delivery Unit (HNDU) [opened Round 15 of applications](#). HNDU supports local authorities, the NHS, universities and property developers by funding techno-economic feasibility studies and detailed project development in England and Wales. The round closed in September 2025.

For Round 15, eligible activities included:

- project management support
- feasibility and detailed project development studies
- zoning studies
- other activities that support the development of heat networks but do not fit into the categories above

Due to overall funding constraints for this round, HNDU could not support borehole drilling costs for geothermal feasibility studies. However, geothermal projects were still eligible for the funding where they deliver heat to a heat network.

Round 10 of the Green Heat Network Fund (GHNF) opened in August 2025 and closed in November 2025. This scheme is a capital grant fund in England that covers commercialisation and construction costs of new low and zero carbon heat networks, as well as retrofitting and expansion of existing heat networks. All stages involved in the commercialisation and construction of geothermal projects were eligible to apply for this fund. As of the end of 2025, the successful awards for Round 10 have not yet been announced.

The Mining Remediation Authority published their [2025 to 2028 business plan](#) in June 2025. The report outlines their ambition to support the development of 3 more large operational mine water heat schemes by April 2028, adding to the 3 schemes already delivering heat across Great Britain. Their plan highlights support to smaller schemes and new technologies and their engagement to 'deliver their commitments in their mine water heat and by-product opportunity frameworks'.

Scotland

The Scottish Government published its draft Climate Change Plan in November 2025, which sets out a clear national direction to decarbonise heating systems by 2045. In the same month, the Scottish Government published the Draft Buildings (Heating and Energy Performance) and Heat Networks (Scotland) Bill.

Heat networks will form an important part of Scotland's overall heat decarbonisation programme, supplying renewable heat (such as geothermal) to homes and other buildings. The Scottish Government is working to align their delivery programmes with local authorities' Local Heat and Energy Efficiency Strategies (LHEES) Delivery Plans. For example, Scotland's Heat Network Support Unit is working with local authorities to take the indicative heat network zones identified through LHEES and develop them into projects through feasibility and business case support. The Scottish Government has summarised all 32 published LHEES and has carried out an evaluation. Together with the LHEES summary, this evaluation will inform the next iteration of LHEES due in 2028.

Scotland's Heat Network Fund (SHNF) makes grant funding available to support the development and rollout of zero emission heat networks across Scotland. Since its launch in 2022, SHNF has awarded £14.5m to a variety of different heat network projects including district heat networks using waste heat and shared ground array projects in Renfrewshire, Motherwell and Aberdeen.

The Heat Network Support Unit (HNSU) supports the growth of heat networks by working with the public sector to address key challenges and build capacity through advice, expertise and financial support. The HNSU, in collaboration with the Danish Board of District Heating and the Royal Danish Embassy in London, is running a successful and ongoing District Heating Mentoring Programme. The 2025 edition brought together Scottish and English local authorities for the first time in a GB-wide scheme, supporting 20 Scottish local authorities with district heating experience from Denmark.

Northern Ireland

In Northern Ireland, energy governance is a devolved policy matter that is managed primarily by the Department for the Economy (DfE). Existing UK-wide agreements and legislation influence energy policy in NI.

During 2025, the GeoEnergyNI project funded by DfE has continued to promote awareness of geothermal energy across Northern Ireland. The GeoEnergy Discovery Centre has visited multiple locations, providing educational resources and interactive experiences - including virtual reality - to support public understanding of geothermal energy and its potential applications.

3. Geothermal Project Development

3.1 Projects Announced and/or Commissioned

Many geothermal feasibility studies were undertaken in 2025. Some examples include NHS Grampian and TownRock Energy's study for Enhanced Geothermal System (EGS) to deliver geothermal heat to the [Foresterhill Health Campus](#) in Aberdeen; Star Energy and Bring Energy's partnership to [expand the Southampton district heating network](#) via the integration of additional geothermal energy; the HuGE mid-deep geothermal study for Hull by Hull University, Eden Geothermal and Consortium Drilling; and deep geothermal heat and power studies commissioned by public sector bodies such as The North East Combined Authority for northeast England.

In 2025, the University of York launched a [deep geothermal energy project](#) to supply geothermal heat to campus buildings by 2028. The three-year project secured £35m funding from the Public Sector Decarbonisation Scheme Phase 4. New seismic reflection and gravity surveys across Campus East and surrounding areas were completed.

Other large-scale geothermal and ground source heat projects funded by the [Public Sector Decarbonisation Scheme Phase 4](#) included the Countess of Chester Hospital and Queens Medical Centre in Nottingham.

In 2025, Weardale Lithium was granted [planning permission for the construction of a lithium extraction facility](#) at Eastgate in Weardale, County Durham. Also in Weardale, Northern Lithium completed [60-day long term pump tests](#) and production trials in a 1:15 scale Direct Lithium Extraction plant, with subsequent detailed design engineering for the operational production unit to deliver commercial UK lithium production via a [tripartite partnership](#).

[Cornish Lithium](#) announced having received planning permission to develop a commercial geothermal lithium production facility at its Cross Lanes Lithium Project. The project will include the drilling and testing of two 2 km deep wells to extract the lithium-enriched brine (Phase 1), and the operation of a demonstration plant (Phase 2).

CeraPhi Energy announced a study for multi-well deep geothermal heating using their monobore borehole system at the 16th-century [Kentwell Hall](#) in Suffolk, England.

Tens of larger scale GSHP projects have been announced by companies such as Rendesco, Last Mile, Kensa, Quantum and Genius Energy Lab. Of these announcements, two examples are outlined below.

1. A UK-based workplace pension provider Smart Pension has made an initial £330m investment in two funds managed by Octopus Energy Generation and OETF to support the funding of geothermal projects. This includes the [Parc Eirin](#) ground source heat pump project in South Wales that will deliver heating and hot water to a heat network composed of 114 new homes.
2. At Aston University in Birmingham, [tenders were invited](#) for the drilling and testing of up to 13 boreholes for an open loop GSHP system to supply low-carbon heating for the university.

The Scottish Government provided funding to NHS Grampian to assess the feasibility of using deep geothermal energy to heat the Foresterhill Health Campus in Aberdeen. The study concluded that while the use of geothermal is feasible, further exploration is required to determine whether it would be economically viable.

Fife Council is actively exploring the possibility of utilising heat from the Pitfirrane Day Level west of Dunfermline. Following development of a Mine Water Heat Opportunity Map in 2023, Pitfirrane day level and mine water treatment scheme were identified as a great opportunity to explore mine water heat in Scotland. In 2025 the Council commissioned the Mining Remediation Authority to deliver a high-level assessment for a mine water heat source from Pitfirrane. The intention will be to either provide green heat to the existing district heat network in the city or to service a nearby strategic development area.

GeoEnergyNI project has obtained Planning permission for a deep geothermal doublet, and work is ongoing to deliver this element of the project. Work has commenced to deliver a deep geothermal system to decarbonise Antrim Hospital.

3.2 Projects Under Construction

In 2025, the University of Leeds completed the first phase of the [Living Lab](#) project, that aims to evaluate the feasibility of harnessing geothermal energy for heating the campus buildings, as part of the University's Net Zero Delivery Plan. The University team [reported promising results](#) from groundwater yield and thermal conductivity measured from the

eleven 150-250 m deep boreholes drilled on campus in 2024. The university will now progress to the design of geothermal heating systems in the campus.

Construction of the large-scale mine water district heating project in Seaham, County Durham, started in 2025. The [Seaham Energy Centre](#) aims to supply heating to the Seaham Garden Village, a housing development composed of 750 new homes, by accessing geothermal heat from the warm mine water treated at the [Mining Remediation Authority's](#) Dawdon mine water treatment scheme.

CeraPhi Energy started work on conversion of a pre-drilled 550-metre borehole to their [CeraPhiWell geothermal system](#) at Scunthorpe General Hospital in North Lincolnshire, England. It will be integrated into a new energy centre that will supply to a heat network. Commissioning of the geothermal heat network is planned for 2026.

In 2025, the UK's first deep geothermal power plant at United Downs in Cornwall was under development by Geothermal Engineering Limited (GEL). Construction and commissioning were accompanied by construction of a 100 tonnes per annum demonstration scale lithium extraction plant (Olver et al., 2025a).

3.3 Projects Operational

This section highlights a selection of geothermal projects that became operational in 2025. For current operational projects which became operational before 2025 please refer to previous [UK Country Reports](#).

No deep geothermal project became operational in 2025. However, it has been reported that the Southampton deep geothermal borehole has returned to operation.

The [Lindsay treatment scheme](#), the first commercial mine water heat scheme in Wales started operating in 2025. Heat exchangers submerged in one of the settlement ponds at the Lindsay scheme, operated by the Mining Remediation Authority, are used to recover around 45 kW of heat from mine water, which is then transferred to an industrial facility near Ammanford. The project is part of the work commissioned by the Welsh government to map areas of Wales most suited for mine water heat schemes.

Tens of GSHP projects have been documented in grants, social media, company websites as in construction or operational across building types, heat networks, residential and commercial uses. Two examples include the Marshland Primary Academy and Keyworth projects outlined below.

1. The Marshland Primary Academy in South Yorkshire, England completed the installation of a [hybrid geothermal and solar system](#). The system secures the heating supply for the school, boosting the facility's energy efficiency and reducing carbon emissions by almost 80%.
2. The closed loop GSHP project at BGS Keyworth offices became operational in 2025. With peak heating capacity around 300 kW, two buildings are heated from 28 boreholes, 225 m deep with enhanced monitoring in place (Boon et al. 2025a).

4. Research Highlights

4.1 Research Infrastructure

Various experiments and research projects have been conducted at the UK GeoEnergy Observatories in Glasgow and Cheshire, including electrical resistivity tomography measurement and modelling (Cimpoiasu et al. 2025), distributed acoustic sensing (DAS) monitoring, and monitoring of thermal plumes (Boon et al. 2025b; Gonzalez Quiros et al. 2026). The at-scale research facilities consist of highly equipped and instrumented surface infrastructure and boreholes accessing the Sherwood Sandstone aquifer in Cheshire (Boon et al., 2025b) and legacy mine workings in Glasgow (Monaghan et al. 2022). The observatories are open to researchers for experiments (i.e. flow tests, heat injection tests). Monitoring data is openly available through the [BGS Sensor Data portal](#) and [UKGEOS](#) website data pages.

In 2025, the Mining Remediation Authority announced the launch of the [Gateshead mine water heat 'Living Laboratory'](#). The research facility, located in the vicinity of three operational mine water heat schemes, consists of four boreholes equipped with state-of-the-art monitoring equipment. It is designed to allow the study of thermal and hydrogeological behaviour between multiple mine water heat schemes and open access data is [available](#).

4.2 Research projects and data

Ongoing large research projects in 2025 include:

- The [GoForward](#) research project initiated in 2024, funded through Horizon Europe, looking at geothermal exploration and optimization through forward modelling and resource development; BGS are UK research partners. In May 2025, the GO-Forward team held a second field-based workshop in Cornwall, England, to collect data for forward modelling of fracture-based geothermal systems.
- The Horizon Europe-funded [CRM-Geothermal](#) project started in 2022, with UK partners including BGS, GEL, and Cornish Lithium, with aims to develop innovative technology solutions combining the extraction of critical raw materials and energy from geothermal fluids.
- The [STeAM](#) (GigaWatt-Hour Subsurface Thermal Energy Storage) project (2023-2026), a £1.2m EPSRC-funded project led by Strathclyde and Edinburgh universities and with multiple authorities and industry partners, continued investigating the potential to use flooded mine shafts for storage of thermal energy. Data-supported numerical models, national shaft assessments and industry-informed experiment design were combined to evaluate how flooded mine shafts could function as economically viable, system-integrated underground heat stores.
- [SmartRes](#) (Smart Assessment, Management and Optimisation of Urban Geothermal Resources), a collaborative research project between Imperial College London, the British Geological Survey, the University of Leeds and the University of Manchester looking into barriers to large-scale deployment of urban geothermal technologies in the UK obtained a one-year extension (until 2026). In 2025, the University of Leeds research team has been conducting a seismic survey, [distributed acoustic sensing \(DAS\) monitoring](#) at the UK GeoEnergy Observatory in Cheshire to explore how the Sherwood Sandstone can respond to the storage and exploitation of heat.

- **ATESHAC** (Aquifer Thermal Energy Storage for the decarbonisation of Heating And Cooling), a collaborative research project between Imperial College London, the British Geological Survey (BGS) and the University of Manchester to support the large-scale deployment of ATEs in the UK was completed in 2025. In 2025, BGS conducted extensive analysis of thermal properties for the UK Triassic sandstone aquifers, including thermal response tests at UKGEOS Cheshire (Boon et al., 2025b).
- The GEOTHERMICA-funded **Galleries To Calories** (G2C) project, initiated in 2024 is led by TownRock Energy and the University of Edinburgh. A 173.2 m deep borehole was drilled and completed across workings of the Roslin Colliery in 2025, followed by hydraulic testing aiming at characterising and understanding the flow within the mine workings of the Midlothian Coalfield.
- As part of the **PUSH-IT** project (Piloting Underground Storage of Heat In GeoThermal Reservoirs), mine water thermal energy storage feasibility studies are being conducted at United Downs in Cornwall by GEL and BGS. Interviews led by BGS were also conducted in Cornwall in 2025 as part of the examination of the regulations around high-temperature underground thermal energy storage in Europe.
- **Hypogene Karst**: Genesis and implications to optimisation of low enthalpy energy resources, involving the Manchester University, Bristol University and the British Geological Survey. The project, completed in 2025, aimed to provide a better understanding of the genesis of these karst systems and the potential implications for circulation of deep fluids and low-enthalpy geothermal systems in the UK.
- **ICHs**: Immersion Cooling and Heat Storage Living Lab led by Durham University began in 2024, includes research on the potential of using flooded mine workings for interseasonal storage of data centre waste heat. In 2025, the research team completed the immersion tank installation and a tender was awarded for drilling.
- The **GEMS** (Geothermal Energy from Mines and Solar Geothermal Heat), a collaborative project between University of Durham and BGS aiming to improve the understanding of the flow and heat transport in flooded underground mines alongside energy storage engineering, social and economic research was completed in 2025.
- **GeoEnergyNI**, a research and demonstration project that aims at exploring the geothermal energy potential in Northern Ireland, secured approval for a deep geothermal system at the Greenmount Campus near Antrim. Phase 1 of the feasibility study for shallow geothermal was completed with the drilling of exploration boreholes in the Stormont Estate in Belfast. Public engagement activities were conducted at the GeoEnergy Discovery Centre and with the release of two short films.
- **GEMINI** (Geothermal energy momentum on the island of Ireland) is a cross-border geothermal energy project initiated in 2024 to support the development of geothermal energy in Ireland (Braiden and Russell, 2025; Noller et al., 2025). Geophysical surveys began in 2025 to improve subsurface characterisation for the County Antrim feasibility study (MacKenzie, 2026), alongside community engagement [activities](#) aiming to strengthen communication, knowledge sharing and education.
- In 2025, the University of Aberdeen secured £1m UKRI/NERC funding for the **Aberdeen Geothermal Feasibility Pilot**. The project will drill and instrument a research borehole to 500m on the University's Old Aberdeen campus to collect geological, thermal, geophysical and hydrogeological data.
- **THERMOCAL** - is a project funded under a collaboration between UK Research and Innovation and the Research Council of Norway. UK partners include the University of Glasgow, the Scottish Universities Environmental Research Centre and Queen's University Belfast. The project aims to develop a quality-assured database of the thermal and radiogenic properties of the Caledonian orogenic belt lithologies via systematic measurement programmes and use heat transfer models to investigate the impact of data uncertainty on real-world geothermal engineering applications.

- [FindHeat](#) - A Novel Exploration Toolkit for Finding Geothermal Heat Efficiently and Sustainably - is an international geothermal energy project (Imperial College London and TRACS are the UK partners). The project aims to develop the *FindHeat platform*, a modular toolkit that will enable a conceptual model-based geothermal exploration and resource assessment workflow.
- [Recovery of metals from geothermal brine](#) (2024-2028), is an EPSRC-funded project led by the University of Oxford. The project aims to develop materials that to enable metal recovery from saline, supercritical geothermal fluids and prevent problematic scale growth on the well-bores.
- The [GeoGrid project](#) (Geosolutions Leeds, Northern Powergrid, LCP Delta, E.ON Next, Leeds City Council, and Star Refrigeration), received funding through Ofgem's Strategic Innovation Fund (SIF) in January 2025. It explored the potential of geothermal energy storage to enhance energy systems' efficiency and sustainability in the UK, using data from the University of Leeds' Geothermal Campus living lab.
- [GEOFLEXheat](#) is a 3-year project funded by the European Union's Horizon Europe Programme and led by Brunel University London, which started in October 2025. The project aims to develop a system that harnesses and upgrades waste heat from low-temperature geothermal brine for industrial use and district hot water, whilst valorising corrosive minerals as a resource and thermal energy storage.
- The GEOGUARD '[de-risking Geothermal Heat Extraction from Tight Hot Sedimentary Aquifer](#)' project was awarded CETP funding in 2025. The project, led by Heriot-Watt University, TownRock and Scene Connect Limited in the UK, will include the characterisation of tight HSAs reservoir properties as well as production uncertainty and social-economic modelling.
- Scottish Enterprise commissioned the University of Strathclyde to produce '[Unlocking the Economic Potential of Mine Water Geothermal in Scotland](#)', investigating stakeholders awareness, perceptions, and the barriers to considering mine water geothermal technologies.

5. Other Activities

5.1 Geothermal Centres and Groups

[Geothermal UK](#) was launched in 2025 as a new non-profit industry coalition of developers, supply chain, academic experts and public bodies. The group aims to unify the geothermal sector, facilitate collaboration, publish joint statements, engage with stakeholders and advocates for supportive policy frameworks and for geothermal as a scalable solution for clean heat, power, and regional development in the UK.

Other active groups include the [National Geothermal Centre](#), the [All Party Parliamentary Group on deep geothermal](#) and the [IEA Geothermal Mine Water Energy Expert Group](#). Groups that evolved in 2025 include the merger announcement of the Ground Source Heat Pump Association, Heat Pump Federation (HPF) and Heat Pump Association (HPA) to form the Heat Pump Association UK (HPA UK), and the integration of the Geothermal Energy Advancement Association into the Renewable Energy Association (REA) to form the Geothermal Energy Forum.

5.2 Industry Arrangements

In 2025, the British energy company Star Energy Group has announced a partnership with Veolia to support the development of large-scale geothermal heating projects in the UK. The [collaboration](#) will include hydrogeological and seismic studies, simulation, and directional drilling to leverage geothermal resources to decarbonise district heating schemes, hospitals, campuses, commercial buildings, and industrial facilities.

5.3 Geothermal Education

There is no geothermal specific Degrees or Masters in the UK, but multiple universities have geothermal modules as part of Earth Science and Energy programmes. There are also several short courses offered through different academic institutes which are specific to geothermal energy.

A number of PhD projects in various geothermal related topics were completed in 2025. A selection is shown below:

- Aquifer thermal energy storage within the Novel Reservoir Monitoring, Modelling and Simulation (NORMS) group - Hayley Firth, Imperial College London
- Exploring the potential of geothermal energy and heat storage in smart cooling and heating network systems – Eshagh Goudarzi, London South Bank University (Goudzardi, 2025).
- Assessing the potential for the utilisation of mine water resources use based on heat demand, energy poverty, building type, proximity to other heat sources and heat network - Katherine Deeming, Strathclyde University (Deeming, 2025a).
- Assessment of flooded mine shafts for thermal energy storage - Dan Whittington, Strathclyde University
- Geological evaluation of low-carbon energy solutions in northeast England - Rifky Wijanarko, University of Aberdeen
- De-risking development of hot sedimentary aquifer geothermal resources: a case study of the Chester formation sandstone, UK - Maelle Brémaud, Strathclyde University (Brémaud, 2025).

15 doctoral positions have been granted as part of the [GENIUS Doctoral Network](#) on Energy Geostructure Integration, funded by the European Union as part of the Marie Skłodowska-Curie Actions Doctoral Networks. In the UK, 3 candidates will focus on the development of numerical tools for the energy [performance of EGS](#), [waste heat storage](#) and heat recovery from [coal mines](#), as well as potential for geothermal utilisation from [flooded mine shafts](#) and the integration of geothermal energy in [agrifood business parks](#).

Conferences and Events

SPE Geothermal 2025 'Gaining Momentum' took place on the 26th-27th February 2025 in Aberdeen (online and in-person), featuring a series of industry and consultancies talks relevant to markets and data analysis, case studies, geothermal planning and development, technologies and next generation geothermal.

The GSHPA held its annual meeting in March 2025. The event, “Heat Pumps – Our Future” brought together industry experts to discuss the future of heat pumps in the UK, including discussions around industry standards and policy updates, electrification of heat and mine workings, heat networks and future opportunities.

The Scottish European Green Energy Centre (SEGEC) held an event in March 2025 promoting the [Clean Energy Transition Partnership \(CETP\)](#) and [Horizon Europe calls](#) which launched later in the year and which included several geothermal topics.

The Clean Heat 2025 event in Glasgow in March 2025, organised by Scottish Enterprise, brought together over 300 attendees from across the clean heat ecosystem including the geothermal sector, with over 70% of attendees from the clean heat supply chain. Topics covered included Local Heat and Energy Efficiency Strategies (LHEES), showcasing the clean heat supply chain, the Grid and heat network investment.

In May (7th – 8th) 2025, IEA Geothermal hosted its fifth Mine Water Geothermal Energy Symposium, organised by the British Geological Survey, in collaboration with the Mining Remediation Authority, and the Department for Energy Security and Net Zero. Presentations focused on case studies of mine water heating, cooling and storage schemes worldwide, including drilling, testing, policy, new schemes and future projects, and updates on research and operational projects. The presentations can be accessed through this [Link](#).)

A geothermal session was held at the annual All Energy renewable energy exhibition and conference in Glasgow (15th May 2025), along with talks and posters within the heat decarbonisation theme.

The UK mining conference in Cornwall (10 – 12th June 2025) featured a Geothermal Forum in collaboration with the International Geothermal Association. The forum offered networking opportunities for those interested to discuss the future of the geothermal power sector in relation to the mining industry in the UK.

The GESGB conference ‘Geothermal in the UK – What’s next?’ organised by the Geothermal Energy Advancement Association was held on the 12th June 2025 at the Geological Society in London. The conference brought together over 100 participants, highlighting the opportunities offered by geothermal and featuring a discussion on advocacy now required in the UK for the development of commercial geothermal projects.

A free, expert-led webinar *“Geothermal Heat Pump Myth-Busting: What You Really Need to Know”* took place on 18th June 2025 organised by Scottish Enterprise and the National Geothermal Centre, joined by approximately 50 attendees. The webinar provided an overview of geothermal heat pumps within the wider clean heat landscape and of “myth-busting” common misconceptions about geothermal and ground source heat pumps.

The Geological Survey of Northern Ireland continued to run a series of monthly geothermal webinars in 2025.

SEGEC held a 2-day knowledge sharing workshop in Glasgow in September 2025 which brought together the international projects supported through GEOTHERMICA and the CETP. Scottish partners showcased their expertise in clean heat and geothermal in Scotland. TownRock Energy presented on the Galleries to Calories project.

The 12th UK Geothermal Symposium organised and hosted by the Geological Society's Energy Group took place on the 11th -12th November 2025 in London and online. The symposium showcased talks and posters covering a wide range of topics from policy, thermal energy storage, mine water geothermal, deep geothermal and lithium, research advances, oil and gas techniques for geothermal innovations and resource characterisation.

5.4 Publications

On national scale datasets, the [UK Geothermal Platform](#) is a freely accessible and comprehensive resource for geothermal information developed by the British Geological Survey and funded by the UK Government's Department for Energy Security and Net Zero (DESNZ). It includes a digital interactive map with over 90 geospatial layers that offers insights into four key geothermal technologies, including vertical closed loop ground source heat pumps (GSHP), open loop GSHP, deep geothermal hot sedimentary aquifers, and engineered geothermal systems (EGS) (Lawley et al. 2025). It aims to support policymakers, developers, researchers, and planners in assessing geothermal potential across the UK.

In August 2025, DESNZ published the [UK geothermal energy review and cost estimations](#) report produced by Arup, which provides updates on the cost and technical assumptions for deep geothermal power, and deep and shallow geothermal heat.

[Project InnerSpace](#) announced in 2025 they were working on "The Future of Geothermal in the United Kingdom", a comprehensive geothermal report and roadmap for the country.

Papers and reports from UK authors in 2025 spanned a wide range of topics. These include:

- Mine-water geothermal, including regulation (Sweeney et al., 2025) and drilling aspects (Wyatt et al., 2025), research outputs from heat injection-abstraction experiments at the UK Geoenergy observatory in Glasgow (Gonzalez Quiros et al., 2026; Receveur et al., 2026, both accepted in 2025), exploration methods (Whittington et al., 2025), climate change impacts (Gillen et al., 2025) and geothermal opportunities (Paraskevopoulou et al., 2025; Deeming et al., 2025b).
- Low-temperature geothermal and ground-source heat, including the development of a geothermal screening tools to inform on district-scale ground source heat pump in shallow aquifers (Roberts et al., 2025), a method for shallow geothermal resource quantification in cities (Makasis et al., 2026, accepted in 2025) and a feasibility study at the University of Leeds (Green et al., 2025).
- Underground thermal energy storage for heating and cooling applications (Liu et al., 2025; Wang et al., 2026, accepted in 2025).
- Deep borehole heat exchanger, including a modelling study for the reconversion potential of onshore hydrocarbon wells (Nibbs et al., 2025; Brown et al., 2025a, Brown et al., 2025b).
- Societal engagement aspects associated to the different stages of geothermal development in the UK or specific projects, including a book chapter (Rohse et al., 2025).

The UK geothermal community has also presented in a number of international conferences, including the [European Geothermal Congress](#) in Zurich, Switzerland, the [50th Stanford Workshop on Geothermal Reservoir Engineering](#) in Stanford, California, the 3rd [International Conference on Energy Geotechnics](#) in France and the [International Mine Water Association Conference](#) in Portugal. The conference proceedings cover various topics. Examples include

the United Downs Project (Menghetti and Giudici, 2025; Olver et al., 2025a; Olver et al., 2025b; Olver et al., 2025c), research outputs on mine-water geothermal (Gonzalez Quiros et al., 2025a; Receveur et al., 2025), regulatory aspects of mine thermal energy storage (Gonzalez Quiros et al., 2025b,c), UK geothermal datasets and tools (Monaghan et al., 2025a), UK country report (Monaghan et al., 2025b), closed-loop systems and deep borehole heat exchangers (Falcone et al., 2025a; Falcone et al., 2025b), aquifer thermal energy storage (Boon et al., 2025b; Jacquemyn and Jackson, 2025; Firth et al., 2025), open-loop systems (Kolo et al., 2025) and shallow geothermal (Boon et al., 2025a; Makasis et al., 2025; Bahlali et al., 2025; Booth et al., 2025).

Scottish Enterprise recently commissioned an [update of a 2023 article on Scotland's mine water geothermal potential](#). They also produced a [series of industry factsheets](#) focussing on a range of sectors, including clean heat. The [heat generation factsheet](#) includes an introduction to the main components of a geothermal drilling rig.

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