



THE ENERGY GROUP
The Geological Society
Burlington House - Piccadilly - London

Annual Report 2024

Chair's Statement

The Energy Group of the Geological Society had a successful 2024, underpinned by one of the most extensive conference programmes the group has put on in recent years. The Group's activities and conferences have brought together a community of geoscientists, engineers, and policymakers, underscoring the vital role of geoscience in shaping a sustainable energy future. Across the full programs of events, we saw:

- 850 attendees across seven diverse conferences.
- Representation from >200 organisations from different organisations.
- Engaging 40 academic institutions and >180 industry stakeholders.

The conference programme consisted of seven conferences in 2024, spanning discipline-specific topics such as stress and stratigraphy; geographic focuses and emerging sectors of energy geoscience. All continuing to be held in a hybrid format, but in-person attendance was strong across the board. While the Group continued to host the most events at Burlington House, this year the Group hosted a conference at The University of Manchester, with strong in-person attendance, confirming the return to a preferred in-person attendance for conferences as it was before 2020.

We greatly appreciate the efforts of the conference convenors and Geological Society of London staff who worked very hard with the logistics and planning of the events, made the hybrid approach a success, and delivered a technically excellent programme, following our ethos of being at the forefront of energy geoscience. Following our positioning from last year and given the demonstrated continued success of the hybrid format, we will continue to offer this as the basis for all future events to make the events as widely accessible as possible.

Financially, the Energy Group had a very strong 2024 and returned a surplus of £64,518 to the Geological Society, which exceeds the forecasted amount of £50,800. This strong return is underpinned by the success of the conference programme. We would like to thank our corporate sponsors BP and ExxonMobil for their financial support, and Nuclear Waste Service, Shell, and Venterra for sponsoring conference events throughout the year. As we moved into 2025, we will continue to seek further support with the drive of targeting a bigger and more diverse group that encompasses different industries within the energy sector.

After returning to the legacy format for the Annual Dinner in 2023, in 2024, the Energy Group hosted a black-tie sitting dinner at the Cutty Shark. The dinner provided the opportunity to celebrate the work our community does, including those individuals who have made exceptional contributions to the energy geoscience field. Our winners were: Energy Group Medal Award: Malcolm Butler and Early Career Energy Geoscientist Award: Chantelle Roelofse

In 2025, the Energy Group will be delivering a strong programme of six conferences, covering a broad range of topics, and continuing our effort of widening the remit of the Energy Group beyond the legacy focus.

Finally, we would like to extend our sincere gratitude to all the convenors, presenters, and attendees of our events. As Chair, I would like to personally extend my appreciation to the Energy Group committee, and particularly those members who have completed their terms, Ivan Fabuel-Perez (Treasurer), Rifky Wijanarko (Student Rep), Helen Doran, Mark Wood and James Todd.

The group's success is underpinned by their generous contributions. I would also like to express my gratitude to the Geological Society of London staff, who provided outstanding dedicated support to the Energy Group.

Conference Report

The Energy Group hosted seven events in 2024 which were attended by a total of 850 registered delegates and maintains a long-term average of 120-130 delegates per event (Figure 1). Of the total of 850 registered delegates, 215 were virtual attendees and 635 were in-person, showing a significant increase in the in-person attendees compared to the previous years (Figure 2 and 3).



Figure 1: Summary of Petroleum Group/Energy Group conference held each year

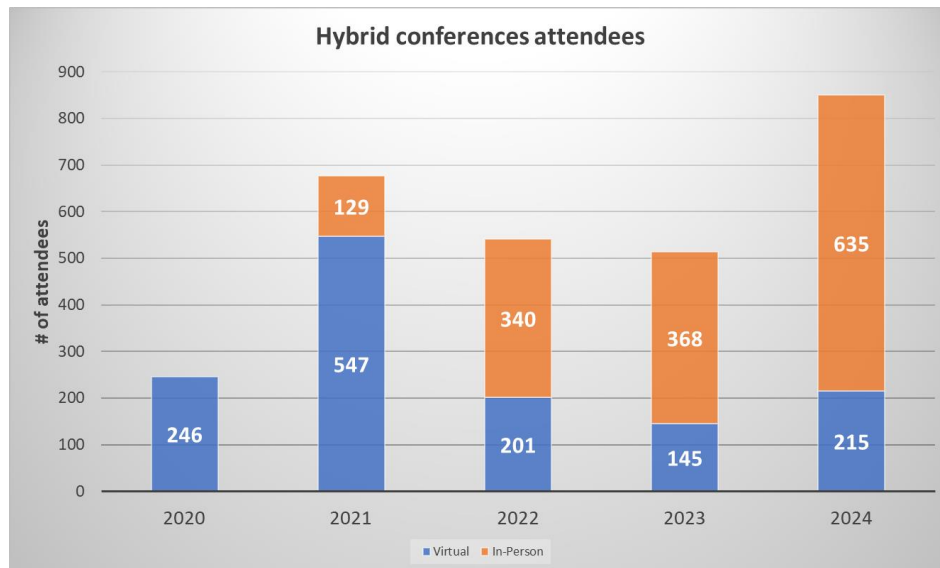


Figure 2: Virtual vs. in-person attendees for conferences between 2020 and 2024

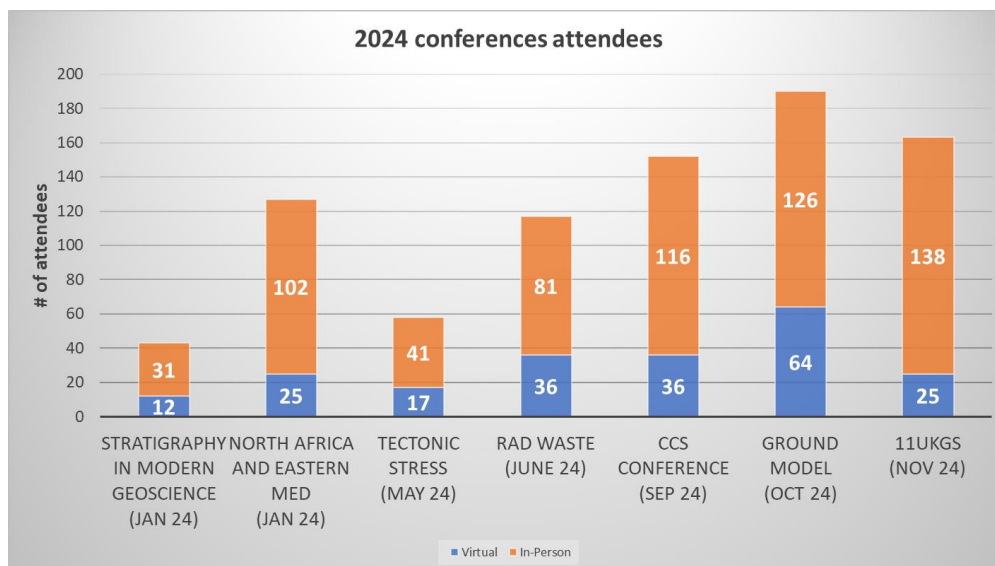


Figure 3: Summary of virtual vs. in-person attendees for 2024 conferences

Stratigraphy in Modern Geoscience

23-24th January 2024

This 1-day meeting brought together a relatively small group of attendees (31 people in person, 12 online) from both academic and industry affiliations to discuss the status and application of “modern stratigraphy”. The day was divided into 3 key sessions, provocatively titled: 1) Is traditional stratigraphy still useful?; 2) AI and machine learning: benefit or hazard?; and 3) Digital outcrop models: potential unfulfilled?. Each session had its own

keynote speaker (Sietske J. Batenburg, Cedric John, and John Howell respectively) to help drive the discussion. 3 keynote speakers There was also a breakout discussion session on the future directions in stratigraphy, which was well engaged by smaller group size of the attendee, and where a key take away was the need for more open data access across industry and academic groups.

Geoscience driving the North Africa and Eastern Mediterranean Energy Hub

31st January-1st February 2024

This conference, held at the Geological Society of London's Burlington House brought together experts from industry, academia, and regulators to cover the latest research, studies and activities in the North Africa and Eastern Mediterranean region. The conference focused in understanding how geoscience plays an important role in unlocking oil and gas resources and developing low carbon technologies to frame the region as a critical energy hub for the 21st century.

The conference received a total of 30 abstracts which resulted in a 2-day conference with 23 oral presentations and 7 posters. The event welcomed a diverse audience from academia, industry, and regulatory bodies, attracting 102 in-person and 25 virtual attendees.

Attendees engaged in in-depth discussions, covering regional geology, petroleum systems of North Africa and Eastern Mediterranean, different case studies, a focused session on the Messinian Salinity Crisis and the Nile Delta Clastic Play and several talks and case studies describing examples of energy transition and low carbon technologies in the region.

The conference finished with a discussion panel on the future of the region as a critical energy hub, chaired by Andrew Latham (WoodMac) and with the participation of Graeme Bagley (Westwood Energy), Mahmoud Khattab (EGAS), Lorenzo Meciani (ENI) and Yolanda Spisto (ExxonMobil).

Tectonic Stress: from the lithosphere to the wellbore

21st-22nd May 2024

This 2-day event brought together mixture of academic and industry groups to discuss our current understanding of Tectonic Stress and how it applies to the energy sector. Keynote speakers included Prof Mark Zoback (Stamford) Prof Olivier Heidbach (GFZ Potsdam), Adriana Paluszny (ICL), Mike Kendall (Oxford), and Mark Tingay (Petronas). The meeting included ~25 talks, 5 posters, and was attended by 41 in person, and a further 17 online. The 2 days were divided into a series of thematic sessions on: Tectonic forces & lithospheric stress; Measuring, monitoring, modelling stress; Geomechanics and fluid flow; and Seismicity and seismic hazards. The meeting also included some devoted discussion sessions where attendees engaged in in-depth discussions about Tectonic Stress, in-situ-stress, and rock mechanics, with many questions posed at, and/or seeking guidance from, Mark Zoback. A GSL special publication is planned following on from the meeting.

Geological Disposal of Radioactive Waste

4th-6th June 2024

The Geological Disposal of Radioactive Waste conference, held from June 4-6, 2024, at the University of Manchester and online via Zoom, was a successful three-day event focusing on various aspects of geological disposal. The conference attracted 52 abstracts, resulting in 10 poster presentations and 41 oral presentations. It covered various topics, including site characterisation, host rock studies, monitoring techniques, transport processes, and engineered barrier systems. The conference's 3-days programme featured presentations in eleven sessions covering various themes from academia, industry, and regulatory bodies, with participants from the UK and international communities.

Key highlights of the conference included the importance of interdisciplinary collaboration across geoscience, engineering, environmental science, and social science and addressing challenges in site characterisation, host rock stability, and long-term safety. Three keynote speakers highlighted international progress in geological disposal: Frédéric Plas from ANDRA discussed France's progress in Geological Disposal Facilities, Tim Vietor from Nagra presented Switzerland's site selection process, and Candida Lean from the Environment Agency addressed the regulation of geological disposal facilities. The conference also included panel discussions and networking opportunities, making it a significant event for professionals and researchers in radioactive waste disposal.

3rd Energy Group CCS Symposium: Characterization and Monitoring of Containment

11th-13th September 2024

In 2024, the Energy Group continued the previous two years' trajectory of delivering specific, targeted symposia on key CO₂ storage topics. This year's topic was the Characterization and Monitoring of Containment, a subject which, to the organizing committee's knowledge, had not been specifically covered in a conference before.

The approach of targeting specific topics and avoiding the trend of general CCS conferences seemed to pay off, as the event was well attended, with 116 people attending in person and 36 attending online.

The topics covered a wide range of subjects, with key project updates from notable CCS projects in both Europe and as far away as Australia, as well as fundamental presentations from leading academics in the field (#muons for monitoring!).

A first for this series of events was conducting a live bowtie exercise with many of the participants, led by representatives from Shell and BP. This proved to be very useful to all, and although logistically tricky, it was well worth the effort. One point of reflection would be that translating this into the virtual space was difficult, and in the future, a better virtual offering during the workshop could perhaps be considered.

Ample space was also given for guided discussions with the audience, providing a good opportunity for representatives from service companies, operators, and regulators to thrash out difficulties and often highlight and dispel misalignments. This was carried out with candour and was a valuable addition to the event.

Ground modelling for Offshore Wind Developments

21st-22nd November 2024

This was the first conference held at the Geological Society dedicated to the Offshore Wind industry, focused on the different aspects and disciplines involved in ground modelling. There were 126 in person attendees and 64 virtual. The 2 days conference was sold out, bringing together a mix of academia and industry. Day one was divided into four sessions: Quantitative Ground Models I and II, Concepts and case studies and Engineering focus, setting the scene for the Glossop Evening organised by the Engineering Group. Day two had interesting presentations on Stratigraphic elements, Ground Model properties and hazards and a final session on assorted topics in the Quaternary sequence. In addition, there were 14 posters in the break-room area and each presenter had a few minutes to present their poster to the wider audience.

Very positive feedback was received and we are now looking already to replicate this success with another event in 2025 focused on different aspects on ground modelling for energy developments.

11th UK Geothermal Symposium.

11-13th November 2024

The 11th UK Geothermal Symposium, held from 11–13 November 2024, marked the third year of this increasingly significant conference, proudly organised as an Energy Group event. With an open call for abstracts generating an impressive 67 submissions, the symposium delivered a robust three-day programme featuring 41 oral presentations, 24 poster sessions, and two newly introduced workshops. The event welcomed a diverse audience from academia, industry, and the public sector, attracting both in-person (138) and virtual (25) attendees.

Highlights of the conference included a keynote address from Cantor Mocke of the Department for Energy Security and Net Zero, and workshops that reflected a growing emphasis on collaboration and innovation. A standout session, co-hosted by the National Geothermal Centre and the Department for Energy Security and Net Zero, explored policy development and processes to advance geothermal energy. Another, led by Pink Granite, focused on optimising drilling techniques. Discussions spanned the UK's national geothermal potential, the progress and impact of ongoing projects, and the scientific advances vital for future commercialisation. Building on its growing success, this year's symposium underscored the pivotal role of geothermal in the UK's energy transition.

Energy Group Dinner and Energy Group Awards

We continued from where 2023 left off with the return of the Annual Dinner in 2024, held at the Cutty Sark in Greenwich, London. This was a chance to celebrate the work our community does including those individuals who have made exceptional contributions to the energy geoscience field. We welcomed attendees from international energy companies, students, consultants, academics to name a few.

We were proud to announce the winners of our awards.

Energy Group Medal –

The geology of the UK is exceptionally varied and comprises a range of resources with nearly a 100-year long history of exploration and data acquisition. Nearly all the geophysical data ever acquired have been collated and made available to the public and commercial companies by the UK Onshore Geophysical Library (UKOGL) through the dedication and commitment of Dr Malcolm Butler who recognised the lack of stewardship of the onshore geophysical data and set up UKOGL as a charity in 1994.

UKOGL subsequently developed an exceptionally user friendly interface to serve the data to the public from which anyone anywhere can download images and electronic versions of seismic and borehole data from across onshore and inshore UK. Importantly, the data are made available in accessible formats suited for use by the lay person thus demonstrating a wish to inform the public, as well as industry standard formats (SEG-Y, LAS, etc) ready for workstation interpretation. This legacy database would cost a fortune to re-acquire and is thus critical to the understanding and utilisation of the UK subsurface.

Harnessing the vast majority of the geophysical data ever acquired in the UK is a phenomenal achievement which is so much more impressive as it was largely the work over 30 years by a single dedicated (unsalaried) person with *ad hoc* support by associates and a data management company (Lynx). The breadth and depth of the work involved means that there is no parallel to UKOGL anywhere in the world.

Early Career Geoscientist Award –

Chantelle is an outstanding early career Geoscientist whose research applied novel methodologies using geophysical data to advance our understanding of fundamental processes in hydrocarbon systems, CO₂ storage, fluid flow and seal integrity. Specific areas where Chantelle's research has pushed the envelope within the research field include 1) methodologies to evaluate leakage risk for CO₂ storage sites using fluid flow features; 2) magmatic sills and hydrothermal vents with implications for hydrocarbon plumbing systems and seal integrity; 3) hydrocarbon leakage associated with salt diapirs and implications for hydrocarbon systems and shallow hazards. The scientific rigour, novel approaches and findings from Chantelle's research have led to her publishing several articles within high-impact peer-reviewed journals.

Since joining industry Chantelle has continued to excel with achievements and highlights at Shell including her significant contributions to Play Based Exploration (PBE) studies both within UK and internationally, completion of a 12-month broadening assignment as a Geophysicist within the Shell Brazil Development Team and undertaking an offshore placed as Wellsite Geologist on a High-Pressure High- Temperature (HPHT) Exploration well in the UK North Sea.

In 2025, we will once again host an annual dinner to celebrate the work of the community. We will strive to do this in a way that makes the dinner as accessible to the diverse range of organisations and individuals that make a vibrant, inclusive, and successful community.

2024 Financial Report.

In 2024 the Energy Group has returned a total surplus of £64,518 to the Geological Society (Table 1). The surplus was ahead of the original budget forecast of £50,800 as a result of:

- Corporate sponsorship from BP (£15,000) and ExxonMobil (£5,000)
- Higher than expected delegate income from the 7 held conferences, with a total conference surplus of £92,028
- Annual Dinner generating a loss of -£10,845
- Administration costs lower than forecasted due to no staff travel incurred

We thank our corporate sponsors BP and ExxonMobil for their support. As we moved into 2025, the Energy Group has initiated a campaign to attract historical and new corporate sponsor across the different industries. We have created a new range of sponsorship options with the aim of attracting a bigger and more diverse group that encompass different industries within the energy sector and continue providing a strong financial support to the group and the Geological Society. Sponsorship invitation letters have started being circulated and will continue during Q1 2025.

	2023 Forecast	2023 Actual	2024 Forecast	2024 Actual	2025 Forecast
Income					
Conference Income	£ 70,000.00	£ 95,630.00	£ 98,000.00	£ 150,405.00	£ 106,000.00
Annual Dinner	£ 30,000.00	£ 24,500.00	£ 30,000.00	£ 35,000.00	£ 20,000.00
Corporate Affiliate Sponsorship	£ 22,000.00	£ 22,000.00	£ 22,000.00	£ 20,000.00	£ 15,000.00
Total	£ 122,000.00	£ 142,130.00	£ 150,000.00	£ 205,405.00	£ 141,000.00
Expenditure					
Conference Costs	£ 23,000.00	£ 35,805.00	£ 31,500.00	£ 58,377.00	£ 58,300.00
Publications	£ -	£ -	£ -	£ -	£ -
Dinner Expenses	£ 30,000.00	£ 14,871.00	£ 30,000.00	£ 45,845.00	£ 15,000.00
Administration	£ 38,200.00	£ 36,558.00	£ 37,700.00	£ 36,665.21	£ 41,070.00
Total	£ 91,200.00	£ 87,234.00	£ 99,200.00	£ 140,887.21	£ 114,370.00
Net Surplus/Deficit	£ 30,800.00	£ 54,896.00	£ 50,800.00	£ 64,517.79	£ 26,630.00

Table 1 Energy Group Accounts Summary- 2023-2025

Energy Group Publications

During 2024 we saw a number of EG sponsored Publication and Thematic Collections being progressed. We had four GSL Special Publications: 1 published/ in print ([SP547](#)), in development/ online first ([SP548](#)), 1 accepted ([SP553](#)), and 1 proposal (Tectonic Stress). In addition we also saw the first issue of the new [Energy Geoscience Conference Series](#) being progressed ([EGS1](#)).

A number of Thematic Collections in both the Petroleum Geoscience and Geoenergy journals have also been progressed, including some that follow directly on from EG events organised in the recent years.

2024 Energy Group Sponsored GSL Publications			
Title	Series/Volume	Status	Scheduled Pub. Month
The impacts of volcanism on sedimentary basins and their energy resources	SP547	Published	Aug-24
Petroleum Group: Development and Production Geology of Carbonate Reservoirs	SP548	Online First publication	TBC
Oceanic Gateways: Modern and Ancient Analogs and their Conceptual and Economic Implications	SP553	Proposal accepted - receiving submissions	TBC
Energy Geoscience: Powering the Energy Transition through Subsurface Collaboration	EGC 1	Proposal accepted - receiving submissions	TBC
Tectonic Stress: from the lithosphere to the wellbore	SP	Proposal in review	TBC
Petroleum Geoscience Thematic Collections			
North Africa and Eastern Mediterranean Energy Hub	PG & Geoenergy Thematic Collection	Invited	TBC
Anything but Kimmeridge! – Alternative Petroleum Systems of Northwest Europe:	PG	Invited	TBC
Geoenergy Thematic Collections			
Digitally enabled geoscience workflows	Geoenergy & PG Thematic Collection	Receiving submissions	TBC
Sustainable geological disposal and containment of radioactive waste	Geoenergy	Receiving submissions	TBC
The energy-critical metals for a low carbon transition	Geoenergy	Receiving submissions	TBC
Hydrogen as a future energy source - exploration, storage, monitoring	Geoenergy	Receiving submissions	TBC
The Earth as a thermal battery: future directions in subsurface thermal energy storage systems	Geoenergy	Receiving submissions	TBC
CO2 Storage Efficiency	Geoenergy	Proposal accepted	TBC

Energy Group Communications

LinkedIn Presence Summary for 2024

In September 2024, the Energy Group launched a dedicated LinkedIn company page to enhance brand visibility, credibility, and SEO, while fostering a stronger online community. Since its inception, the page has achieved significant engagement, with 551 page views from 356 unique visitors and 22,022 content impressions across 29 posts. This content garnered 4,141 reactions, 28 comments, and 29 reposts, resulting in an impressive engagement rate of 6%—well above the 3% benchmark. The page has already attracted 756 followers, marking a strong start with promising growth potential. We are also trialling duplicating the Energy Group Newsletter as a LinkedIn article with the December article getting 1,168 impressions, 73 engagements (6.3%), 22 reactions and 3 reposts with 96 detailed article views. We hope this will help our newsletter reach a wider audience and encourage interaction with the group.

The Energy Group's personal LinkedIn page, active throughout 2024, has also shown robust growth. Over the year, it recorded 551 page views, 22,384 content impressions (a 155.8% increase year-on-year), and reached 5,833 members (up 94.5%). Engagement metrics include 361 total interactions—up 179.9% from the previous year—with top-performing posts related to abstracts for radioactive waste disposal, tectonic stress, and geothermal

conferences. With 2,404 followers and an engagement rate of 6%, the personal page continues to complement the success of the company page, further solidifying the Energy Group’s online presence.

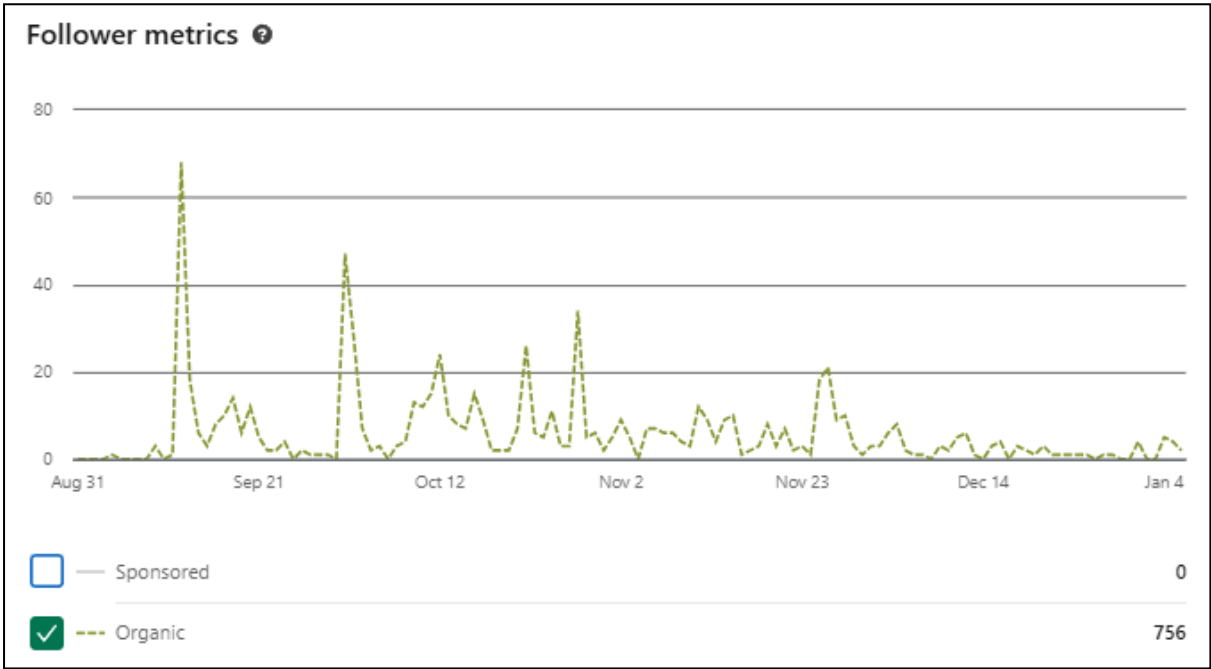


Figure 1: Energy Group Company LinkedIn Page Follower Metrics since 31 August 2024

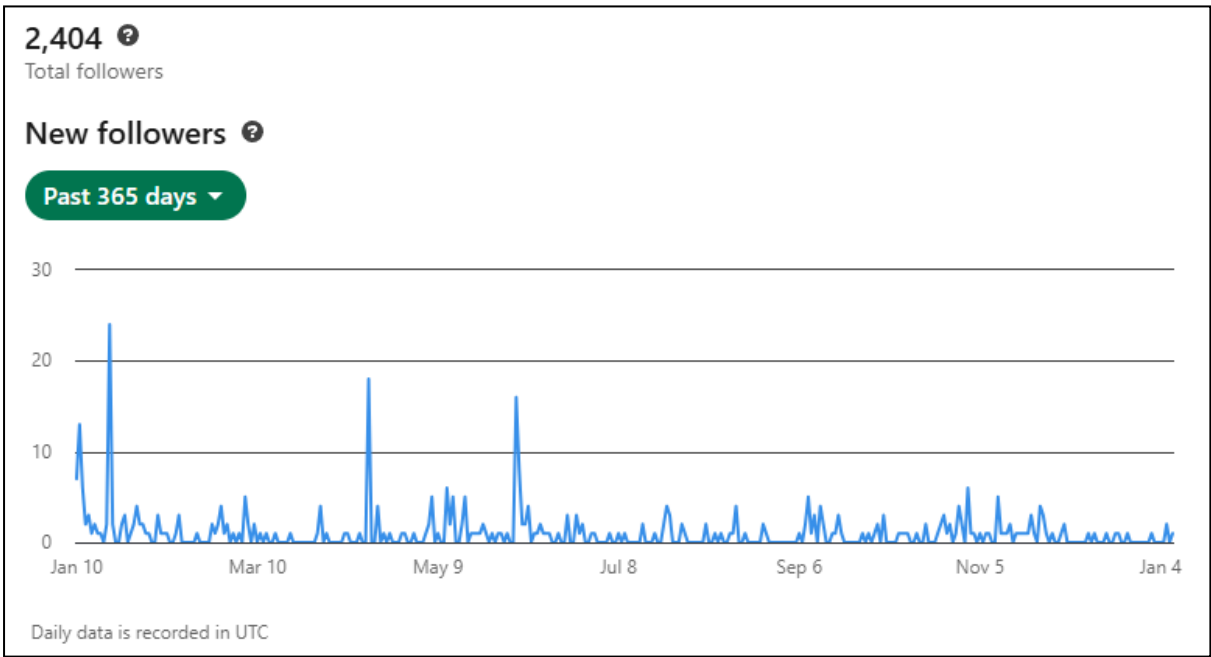
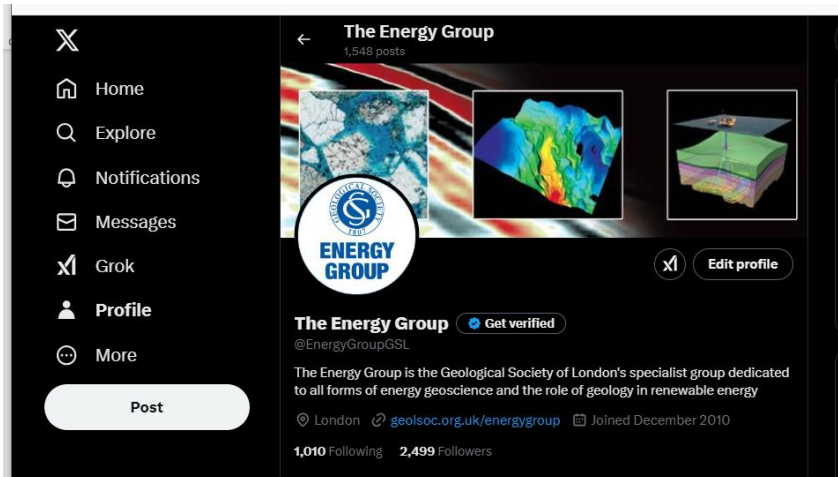


Figure 2: Energy Group Personal LinkedIn Page Follower Metrics since January 2024

X (Formerly Twitter) Presence Summary for 2024

Our X (formerly Twitter) account currently has 2,499 followers.



Looking forward

In 2025 a diverse program of events that are planned.

- Subsurface Energy Storage - Geoscience, Policy and Application (19-21 March)
- Fracture Gradient: Fact or Fiction (25-26 March)
- 2nd Natural Hydrogen Conference – Understanding the Geoscience (1-2 July)
- 4th CCS Symposium (10-12 September)
- 12th Geothermal Symposium (10-12 November)
- Geohazards in the Energy Transition (4-5 December)

We will continue to offer all Energy Group events as a hybrid format as we believe that by doing so, we will continue to offer more inclusive events by benefiting from a wider and more diverse audience.

Committee Updates

Several members are stepping down and new members are joining the committee. We take this opportunity to acknowledge the contribution of the members who are stepping down and welcome the new members who will take the committee forward.

The Committee is extremely grateful to the retiring members for their contribution and dedication to the events and conference programme over their time on the committee.

Retiring Committee Members

Ivan Fabuel-Perez – Exxon Mobil (Treasurer)

Rifky Wijanarko – University of Aberdeen

Helen Doran – Ola Geoscience

Mark Wood – Shell

James Todd – Arup

2025 – 2026 Officers of the Energy Group Committee

The following were appointed or continue as officers of committee for the period 2025 – 2026.

Mark Ireland – Chair (Newcastle University) 2024-2025

Lin Ma – Treasurer (University of Manchester) 2024-2026

Woody Wilson – Publications Officer (BP) 2024-2025

Munira Raji – Communication Officer (University of Plymouth) 2024-2025

Joining Committee Members

The following were appointed to the committee for the period 2025 – 2027.

Clare Glover – Exxon Mobil

Alison Monaghan – BGS

James Preston – Shell

Kirsty Simpson – North Sea Transition Authority

Stephen Eaton – Arup

Ivan Fabuel-Perez

Energy Group Treasurer