



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

Annual Report 2023

Executive Summary

Following a few years of instability driven by COVID-19 and the repositioning of the legacy Petroleum Group into the Energy Group, 2023 has been a great year with a attractive technical programme covering a wide spectrum of topics, a successful Annual Dinner and a strong financial year. In 2023, the year of the first broad spectrum Energy Geoscience conference (EGC 1), which many committee members were actively engaged in, the Energy Group organised 4 conferences from June to November, all being held in a hybrid format, but with a strong return of in-person attendance at Burlington House.

Once again, we greatly appreciate the efforts of the conference convenors and Conference Office 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.

Once again, we would like to thank our corporate sponsors BP and Equinor for their continued financial support. As we moved into 2024, we welcome ExxonMobil as corporate sponsor and we will continue to seek further support with the drive of targeting a bigger and more diverse group that encompass different industries within the energy sector. We would also like to thank ExxonMobil, ERCE, The Crown State and Sustainable Energy First for sponsoring conference events throughout the year.

Financially the Energy Group had a very strong 2023 and returned a surplus of £54,896 to the Geological Society, which exceeds the forecasted amount of £30,800.

After testing a different format at the 2022 Annual Dinner, with a smaller affair at Burlington House, we returned with the legacy format of black-tie sitting dinner being hosted at the P&J Live venue, coinciding with the second evening of the Energy Geoscience Conference in Aberdeen. We also introduced the option of individual attendees via a ballot process. In 2024 we will build on this success and hold the 2024 Annual Dinner as a black-tie event in the Cutty Sark on June 20th.

Finally, in 2024 the Energy Group will be delivering a strong programme of six to seven conferences, covering a broad range of topics, and continuing our effort of widening the remit of the Energy Group beyond the legacy focus.

Conference Report

The Energy Group hosted 4 events in 2023 which were attended by a total of 513 registered delegates and maintains a long-term average of 120-130 delegates per event (Figure 1). Of the total of 513 registered delegates, 145 were virtual attendees and 368 were in-person (Figure 2).



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

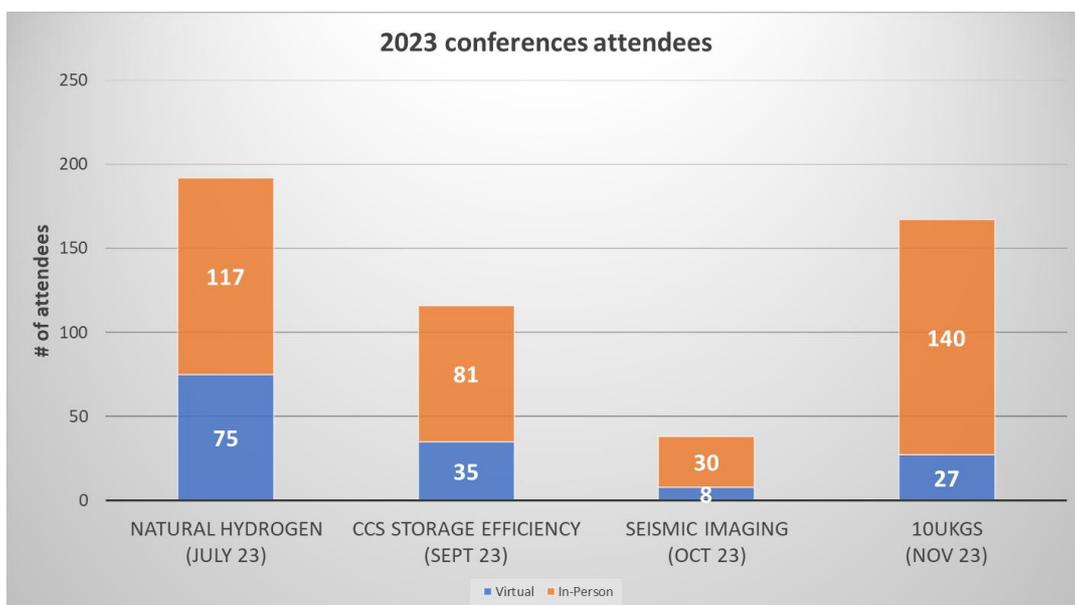


Figure 2: Summary of virtual vs. in-person attendees for 2023 conferences

Natural Hydrogen: A New Frontier for Energy Geoscience

4-5th July 2023. Hybrid Conference.

The recent two-day conference on natural hydrogen brought together over 150 experts in the field to discuss key aspects of hydrogen exploration, including geoscience knowledge gaps, comparisons with the petroleum system, case studies from different geographical locations, methods of hydrogen generation, and factors required for successful hydrogen accumulations.

The conference emphasized that natural hydrogen, once considered a geological curiosity, is gaining attention due to the energy transition. Geoscience knowledge gaps in hydrogen exploration were discussed, particularly in understanding the formation and occurrence of hydrogen-rich seeps. The conference shed light on the existing knowledge gaps related to hydrogen exploration, particularly the identification of the original hydrogen source. Challenges in estimating reserves and accessing comprehensive geophysical datasets were also highlighted. Key to the success of hydrogen exploration is coupling the skills of igneous geochemistry, hydrology and geology.

Overall, the conference provided valuable insights into natural hydrogen exploration. Participants discussed geoscience knowledge gaps, drew comparisons between the hydrogen and petroleum systems, presented case studies from various geographical locations, explored methods of hydrogen generation, and highlighted factors necessary for successful hydrogen accumulations. The knowledge shared at the conference will contribute to advancing the field of natural hydrogen exploration and its potential as an alternative energy source. A special thank you to chair Owain Jackson and his organizing committee for pulling together the first Natural Hydrogen conference of the Energy Group.

CO2 Storage Efficiency: Challenges with standards and consistency in capacity estimations

14-15th Sep 2023. Hybrid Conference

The convention on CO2 Storage Efficiency tackled the complex topic of storage capacity calculations. It was held at the Geological Society of London's Burlington House on September 14th and 15th 2023, and brought together experts from industry and academia, and government representatives.

With this convention we aimed to get a step closer to establishing a consistent, multidisciplinary approach for estimating Storage Efficiency and guidelines for its use in CO2 storage development and investment decisions.

Attendees engaged in in-depth discussions, covering micro-scale flow processes, pressure integration, SRMS applicability, and the role of these calculations in investment decisions. Keynotes, Q&A sessions, poster presentations, and panel discussions marked each day's agenda. Day one was a journey through the 'Experience and use of storage efficiency in describing and comparing CCS globally,' while day two navigated the intricate waters of 'Methodologies and applications of storage efficiency calculations.'

Each day began with keynote speeches that invited deep dives into the subject, punctuated by lively Q&A sessions. Post-lunch, we enjoyed short talks that provided an introduction to the more in-depths poster presentations. The crescendo of each day was a panel session that brought a lively debate throughout the late afternoon.

This convention, hosted by the Energy Group of the Geological Society of London, marks a significant step toward understanding and utilizing storage efficiency.

[Seismic Imaging: Applications in the energy transition and beyond.](#)

24-26th Oct 2023. Hybrid Conference

This two-day specialist subject conference spanned the use of seismic methods in the energy transition, as well as in scientific exploration. The conference brought together a modest attendance, 38, but a high quality of technical content. The conference included international contributions, and from industry and academia. It included use cases ranging from conventional O&G exploration, CCS, hydrogen storage and offshore wind development. In the initial planning of the conference there were at least three other conferences hosted by other organizations with similar/overlapping content, which in part may have impacted the ability to attract larger numbers. Despite the modest size, the diligent planning by GSL staff ensured the conference still made a modest profit.

[10th UK Geothermal Symposium.](#)

20-22th November 2023

This three-day event saw the second year, of this regular conference, badged as an Energy Group event. For 2023 the event went with a conventional open abstract call, as opposed to the invitation programme of the previous year. The event attracted 167 attendees with the three-day programme consisting of 48 oral presentations. The conference has a board representation across academia, industry and the public sector. Of note on the first day keynote speakers included Dr Kieran Mullan MP, Conservative MP for Crewe and Nantwich, and Marit Brommer, Executive Director of the International Geothermal Association. The conference provided a platform for the discussion of the national opportunity that geothermal has in the UK, progress and impact of existing projects, and the advances in science that could support the commercialisation of future resources. This was perhaps the most successful UK Geothermal Symposium to date.

[Energy Group Dinner and Energy Group Awards](#)

The Energy Group Annual Dinner & Awards was held at the P&J Live on the second evening of the Energy Geoscience Conference, 16-18 May in Aberdeen. The dinner format was formal evening wear for a sit-down meal with tables of 10 available for purchase by organisations and a ballot entry for individuals. Both proved reasonably popular, and the dinner catered for 120 individuals.

After gathering for drinks and nibbles we were piped-in in the traditional Scottish manner by Dr Stuart Archer. The dinner speech was delivered by Dr Karen Hanghøj, the Director of the British Geological Survey who provided an engaging overview of critical minerals. Between

courses the 2023 Energy Group Medal, was presented to Dr Marie Cowan by the Energy Group Chair, Dr Mads Huuse, whilst the Early Career Geoscientist Award was presented to Dr Natalie Farrell by the vice-Chair of the Energy Group, Dr Mark Ireland. Both recipients responded emphatically about the significance of the award to them and their peers and disciplines.

The evening was an excellent chance to honour both the awards winners and the past chairs Lucy Williams and Dr Caroline Gill who led the transition from the Petroleum Group to The Energy Group during the years of Covid-19 restrictions. It was also a great evening to welcome the new Geological Society CEO Simon Thompson, and new Director of Science and Engagement, Dr Natasha Stephen and to thank all the Geological Society events staff who helped facilitate the conference and the evening.

Energy Group Medal – Marie Cowan

Dr Marie Cowan has been Director of the Geological Survey of Northern Ireland since 2014 and in addition is Team Leader for the Energy, Minerals and Waste Team. Marie serves as a member of the BGS Senior Management Board, an official of the Department for the Economy for Northern Ireland and is responsible for delivering the science contract between BGS/UKRI and the DoE. Marie's role as GSNi Director places her at the forefront of managing the Geothermal Demonstrators (NI Executive's Energy Strategy Action Plan 2022) program and team. She feeds the work of this group into the development of energy policy in NI and has been working with the Department to include geothermal on the new EU PEACE PLUS Programme, which was allocated 20M Euros for geothermal.

Marie is an outstanding female role model who navigates the delicate position of uniting Northern Ireland with energy policy makers in both Great Britain and in the Republic of Ireland.

Early Career Geoscientist Award. – Natalie Farrell

Natalie Farrell graduated BSc (Liverpool) in 2006 and PhD (Aberdeen) in 2015. Between these she worked in the petroleum industry but since 2010 via part-time working has taken significant time out for maternity leave and to devote time to childcare (details: see CV). She now holds a prestigious Leverhulme individual fellowship at Manchester. Her research has been strongly energy oriented, focusing on fluid flows around faults, fault sealing and CCS reservoir leakage, taking field and experimental approaches, and always with regard to societal implications. Her publications have proved impactful and highly regarded, attracting awards (JSG student author and TSG Ramsay medal) and invited presentations. Prof J. Evans (U. Utah) drew attention to her developments from presently simplistic fault-seal methodologies, by taking into account in-situ alteration and deformation effects and addressing the roles of mineral compositions on fault-seal behaviour. Her 2014 paper on anisotropic fluid flow around faults has become a standard reference paper for oil companies including BP with over 130 citations. Her present experimental rock mechanics research Natalie takes a highly innovative approach to understanding the behaviour of fault rocks in chemically reactive environments, that will be of immense importance to engineering in a rapidly diversifying subsurface environment.

2023 Financial Report.

In 2023 the Energy Group has returned a total surplus of £54,896 to the Geological Society (Table 1). The surplus was ahead of the original budget forecast of £30,800 as a result of:

- Corporate sponsorship from BP and Equinor of £22,000
- Higher than expected delegate income from the 4 held conferences, with a total conference surplus of £59,825
- Annual Dinner generating a profit of £9,629
- Administration costs lower than forecasted due to no staff travel incurred

We thank our corporate sponsors BP and Equinor for their continued support. As we moved into 2024, the Energy Group welcomes ExxonMobil as a new corporate sponsor. We will also continue seeking for new corporate sponsors with the idea of targeting 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.

	<u>2022</u>	<u>2022</u>	<u>2023</u>	<u>2023</u>	<u>2024</u>	
	<u>Forecast</u>	<u>Actual</u>	<u>Forecast</u>	<u>Actual</u>	<u>Forecast</u>	
Income	Conference Income	£ 92,000.00	£ 87,559.00	£ 70,000.00	£ 95,630.00	£ 98,000.00
	Annual Dinner	£ 24,000.00	£ 7,900.00	£ 30,000.00	£ 24,500.00	£ 30,000.00
	Corporate Affiliate Sponsorship	£ 22,000.00	£ 22,000.00	£ 22,000.00	£ 22,000.00	£ 22,000.00
	Total	£ 138,000.00	£ 117,459.00	£ 122,000.00	£ 142,130.00	£ 150,000.00
Expenditure	Conference Costs	£ 53,900.00	£ 35,327.00	£ 23,000.00	£ 35,805.00	£ 31,500.00
	Publications	£ -	£ -	£ -	£ -	£ -
	Dinner Expenses	£ 24,000.00	£ 13,351.00	£ 30,000.00	£ 14,871.00	£ 30,000.00
	Administration	£ 36,900.00	£ 40,805.00	£ 38,200.00	£ 36,558.00	£ 37,700.00
	Total	£ 114,800.00	£ 89,483.00	£ 91,200.00	£ 87,234.00	£ 99,200.00
Net Surplus/Deficit	£ 23,200.00	£ 27,976.00	£ 30,800.00	£ 54,896.00	£ 50,800.00	

Table 1 Energy Group Accounts Summary- 2022-2024

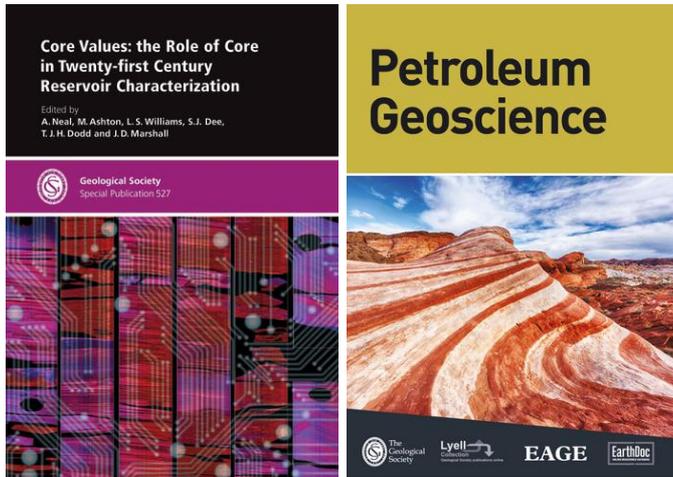
Energy Group Publications

One Special Publication:

- SP527: Core Values: The Role of Core in 21st Century Reservoir Characterisation

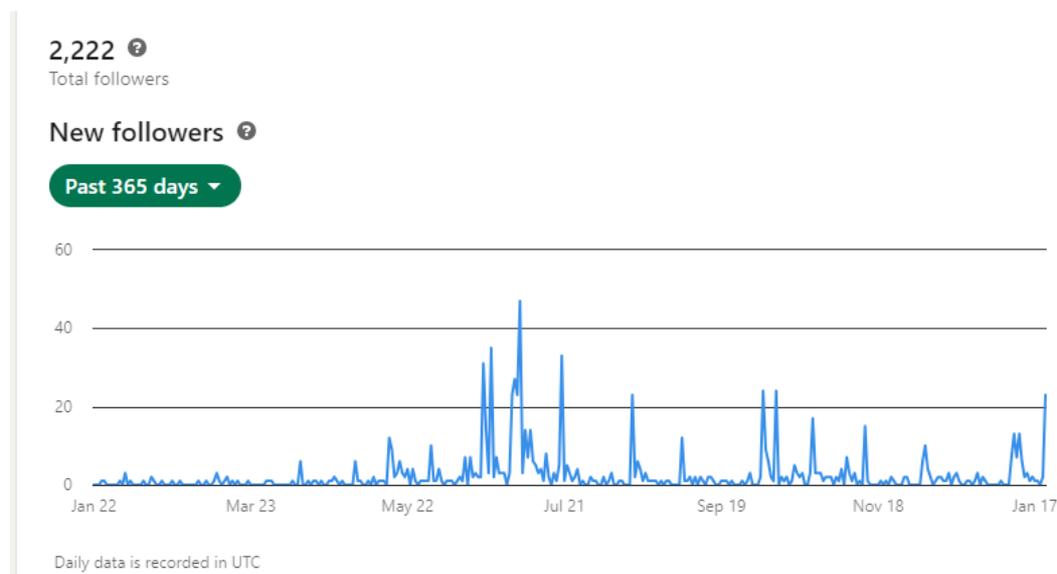
One Thematic Set was published in Petroleum Geoscience:

- Geopressure: Managing uncertainty in geopressure by integrating geoscience and engineering



Energy Group Communications

The Energy Group has seen steady growth in LinkedIn connections and followers over the past 6 months. Currently we have 1,341 connections, up 202 since June. Our followers stand at 2,222, an increase of 505 since June. There is steady growth in network and followers- higher growth rate in followers. For LinkedIn, connections are valuable as they allow direct sharing with our connections. Followers receive updates but are more passive. The higher growth in followers suggests wider audience reach, but continued posting of engaging content will help increase connections, followers and interactions over time. Our top professional audience demographics are geologists (8.3 %), geoscientists (4.4 %) and geophysicists (2.9%). Our top professional followers are geologists (8.3%), geoscientists (4.4%) and geophysicists (2.9%). Our most viewed content this year was conference announcements and events - indicating good engagement around our core activities.



Top demographics

Job titles ▾

Geologist · 8.3%

Geoscientist · 4.4%

Geophysicist · 2.9%

Professor · 2.5%

Lecturer · 1.4%

Energy Group posted this · 7mo



Come join us for a discussion on CO2 Storage Efficiency-a convention with a mix of keynote talks, 5-mins poster pitches & panel discussions.

...

...show more



164

9 comments

▲ 9,220
Impressions

Energy Group posted this · 3mo



Just a quick reminder that the deadline for submitting abstracts to the "Stratigraphy in Modern Geoscience" Society is just over 2 weeks away. ...

...show more



72

3 comments

▲ 4,958
Impressions

Energy Group posted this · 7mo



Call for abstracts...

...show more



85

▲ 4,738
Impressions

Looking forward

In 2024 a diverse program of events that are planned.

- Stratigraphy in Modern Geoscience: methodologies, application, and future relevance
- Geoscience driving the North Africa and Eastern Mediterranean Energy Hub
- Tectonic Stress: from the lithosphere to the wellbore
- Geological Disposal or Radioactive Waste
- 3rd CCS Symposium
- Ground Model conference
- 11th UK Geothermal Symposium (TBC)

Despite the great success of in-person attendance in 2023 (368 in person delegates out of a total of 513 delegates) 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.

Finally,

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

Corina Abesser – BGS

David Townsend – Townrock Energy

Simon Norris – NDA

Mads Huuse – University of Manchester

Tina Lohr – Publications Officer (ERCE)

2024 – 2025 Officers of the Energy Group Committee

The following were appointed or continue as officers of committee for the period 2024 – 2025.

Mark Ireland – Chair (Newcastle University) 2024-2025

Ivan Fabuel-Perez – Treasurer (ExxonMobil) 2022-2024

Lin Ma – Vice-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 2023 – 2025.

Ehsan Daneshvar – Future Geoscience Ltd

Tiago Alves – Cardiff University

Alison Hull-Bailey – Harbour Energy

Holly-Marie Owen – ERCE

Lin Ma – University of Manchester

Ivan Fabuel-Perez

Energy Group Treasurer



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