



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

Annual Report 2022

Executive Summary

2022 has been a great year of continuing the transformation into the Energy Group. In 2022 the Energy Group held 5 conferences and co-badged 1 conference with a further 3 online-only events. As the first year, where all the COVID restrictions were lifted, all the events were held in a hybrid format, with a good mix of delegates attending both in person at Burlington House and virtually.

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. With the demonstrated continued success of the hybrid format, including the significant improvement on the technical side for virtual delegates, we will continue to offer this as the basis for all future events in order 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 2023, we are going to be seeking further corporate sponsors with the idea of targeting a bigger and more diverse group that encompass different industries within the energy sector. We would also like to thank Shell, ExxonMobil, TotalEnergies, BGS, CGG, Cornish Lithium, NOV and Seequent for sponsoring conference events throughout the year. Because of this support we were able to offer a competitive price for the events and to include free places for student members of the society.

Financially the Energy Group had a strong 2022 and returned a surplus of £27,976 to the Geological Society, which exceeds the forecasted amount of £24,307.

For the first time since 2019, it was with great pleasure that the Energy Group was able to host the Annual Dinner, albeit a smaller affair at Burlington House, where the 2022 Energy Group Awards were presented. The interim format and venue allowed everyone to reconnect, not just with each other, but also with our spiritual home in Piccadilly, which some attendees were returning to for the first time in quite some time. In 2023 we will host the Annual Dinner on 17th May at the P&J Live venue, co-located with the Energy Geoscience Conference in Aberdeen (16-18 May), and in a more familiar format with sponsored tables and a ballot for individual attendees.

In 2023 the Energy Group will be delivering an extended programme of five conferences with a further two co-badged events on a broad range of topics, continuing our effort of widening the remit of the Energy Group beyond the historical focus.

Conference Report

The Energy Group hosted 5 events in 2022 which were attended by a total of 541 registered delegates and maintains a long term average of 100-120 delegates per event. Of the total of 541 registered delegates, 201 were virtual attendees and 340 were in-person.

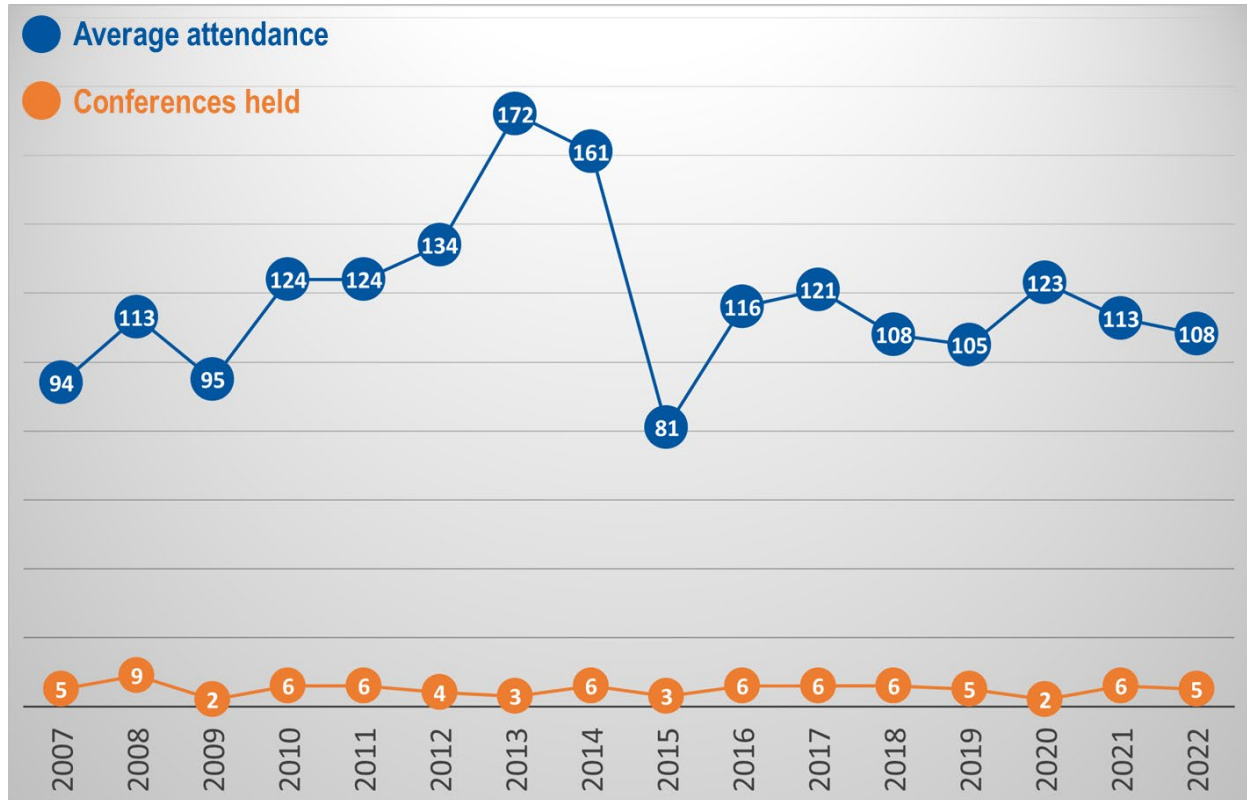


Figure 1 Summary of Petroleum Group / Energy Group conference held each year

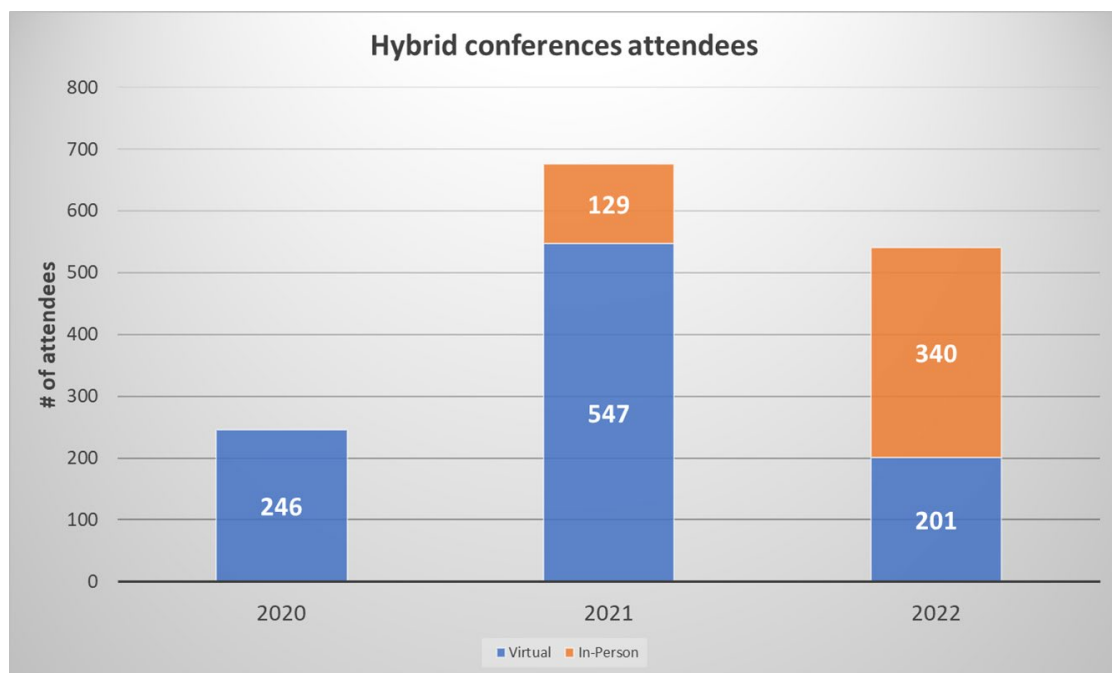


Figure 2: Summary of virtual vs. in-person attendees since conferences are held as a hybrid event

Co-badged event I: Energy Transition Series 1: Geothermal Energy 26th January 2022

Geothermal Energy is plentiful and greatly underutilised. In order to explore the various guises of geothermal energy provision around the world Energy Group co-badged this seminar with UNESCO Earth and The IUGS as part of the IUGS@60 anniversary celebrations. The seminar was free to attend and had over 400 registered with up to 191 attendees present at any one time. Presentations included geothermal projects and pep talks from Cornwall, Iceland, Kenya, Jordan and Utah

Co-badged event II: State of the Planet event on Earth Day, 22nd April 2022.

Another well-attended online seminar co-badged with UNESCO Earth and The IUGS to take stock of the planetary boundaries and explore humanity's progress towards the Sustainable Development Goals. Presenters from many disciplines gave an alarming state of the planet report, suggesting much more progress is urgently needed across disciplines and borders.

Applicability of Hydrocarbons Subsurface Workflows to CCS

28-29th April 2022 Hybrid Conference

This conference was held immediately following the Society's Energy Transition Discussion Meeting and proved very popular indeed. The inspirational plea for 'Geological Net Zero' issued by Prof Myles Allen in the days before the conference provided ample context for the need to scale up Geological Carbon Storage. The conference programme was a full two days with 86 in person and 65 online attendees. The large audience and speakers contributed to lively discussions following each subset of the 23 oral presentations, at the ExxonMobil sponsored panel session on 'Information and Practice Sharing Between Industry and Academia', and at each of the 8 posters displayed in the lower library during the breaks and dedicated poster session. The conference was sponsored by ExxonMobil and Shell, with BP and Equinor as all-year sponsors. There was considerable interest in a Special Publication and the papers submitted for this are currently in review for 2023 publication. The CCS workflows conference was followed by a 1-day red rocks and DRAX fieldtrip organised by Sean McQuaid, Sam Krevor, Ed Hough, Oliver Wakefield and Catriona Reynolds. This was very well organised and 16 participants enjoyed seeing the CO₂ source and the reservoirs in which the CO₂ is due to be sequestered from 2025.

The CCS theme will be followed up this year with a CO₂ storage efficiency conference.

Development and Production Geology of Carbonate Reservoirs

11-12th May 2022 Hybrid Conference

Carbonate reservoirs constitute some of the most important sources of global oil and gas production. They form the world's largest oil and gas accumulations, the world's highest-producing fields, and have some of the longest production histories. Significant new

carbonate discoveries continue to be made, and carbonates are also a source of geothermal energy or may be utilised for gas storage.

This hybrid conference, held at Burlington House and virtually, focussed on how lessons learned from more than a century of discovery, appraisal and development of carbonate reservoirs may be applied to emerging discoveries and emerging energy resources. The conference was well attended, with a total of 82 delegates (48 In-person and 34 virtual). The conference offered a wide range of presentations and posters grouped in 3 key themes: Traditional Oil & Gas, The Energy Transition and Modelling and Outcrops.

The conference included two associated fieldtrips: “The carboniferous platforms of Derbyshire”, led by Peter Gutteridge from Cambridge Carbonates, and “Zechstein carbonates of the north-east of England”, led by Geospatial Research Ltd.

It is the intention of the Convenors is to publish a GSL Memoir or Special Publication based on the conference content. There has been an initial call to the presenters to submit abstracts with a very encouraging number of positive responses.

The impacts of volcanism on sedimentary basins and their energy resources.

8-9th Sep 2022 Hybrid Conference

The volcanism in basins conference attracted an audience of 49 in person and 17 online and was followed by a field trip to the volcanic rocks in Edinburgh and Fife with 13 participants led by Douglas Watson and Charlotte McLean. The conference received sponsorship from Shell and Total Energies, plus the rolling contribution from BP and Equinor. The densely packed programme included 30 talks and 6 posters, including lightning style poster presentations, and covered basin geology, carbon storage, geothermal and petroleum systems implications of volcanism in basins.

Geological Net Zero

13th October Online Only (free) Seminar & Discussion

The Geological Net Zero seminar and discussion was held in the afternoon of 13th Oct as a joint event with The IUGS as the third instalment of the Energy Transition Series marking the 60th Anniversary of The IUGS. The programme ranged from science and society and sustainable development to a rallying call for ‘Geological Net Zero’ and its technological implementation. The seminar had 92 online participants with 74 staying for the discussion. There was wide support for the concept of ‘Geological Net Zero’ as a useful concept to focus minds towards COP28.

9th UK Geothermal Symposium

14-15th Nov 2022. Hybrid Conference

The 9th UK Geothermal Symposium was the most successful yet in terms of attendance; it was held over two days at Burlington House and attracted an in person audience of 108 including a member of parliament, the House of Lords, and from the Department of Business Energy

and Industry. An online audience of 44 were able to participate in invited talks and discussions. The conference attracted sponsorship from the BGS, CGG, Cornish Lithium, NOV, and Seequent. This year the 10th UK Geothermal Symposium will be a three day event with invited speakers and open abstracts with a wider scope including shallow geothermal and lessons learned from overseas projects.

Oceanic Gateways: Modern and Ancient Analogues

23-25th Nov 2022. Hybrid Conference

A great success of the International meeting “Oceanic gateways: modern and ancient analogues and their conceptual and economic implications” (23 to 25 Nov 2022) with more than 60 people and 60 contributions (43 oral, 9 poster and 8 Keynotes): 11 contributions in Session One: Tectonic Controls on Gateways; 28 in Session Two: Oceanographic, Palaeoceanographic and Sedimentary processes and deposits; 2 in Session Three: Data integration & multidisciplinary analysis; 11 in Session Four: Gateways in Polar regions; and 5 in Session Five: Implications of gateways and contourite deposits on energy geosciences. Also 3 General discussion sessions (one per day) were organised and one round table about: “Oceanic gateways & energy geosciences” A Geological Society of London Special Publication titled: “Oceanic gateways: modern and ancient analogues and their conceptual and economic implications” have been proposed with 26 potential contributions that covered all the covered topic during the meeting.

Energy Group Dinner and Energy Group Awards

Following several years without an annual awards evening, it was with great pleasure that the Energy Group was able to host the first Energy Group Annual Dinner event as a reception in Burlington House. We wanted to recreate as much of the ambiance of previous years dinners held at the Natural History Museum whilst opening up to a wider audience of geoscientists post Covid. A new format was tried in order to allow everyone to reconnect, not just with each other, but also with our spiritual home in Piccadilly, which some attendees were returning to for the first time in quite some time.

The evenings celebrations centred around the awards themselves which were preceded by an impressive-as-always and thought-provoking talk by Professor Chris Jackson. His words provided many a follow up discussion over drinks in the lower library. There were opportunities during the evening to inspect some of the Society’s antiquities both in the upper and lower library, with rare glimpses of some of the oldest maps from the archives out on display.

Moving forwards the event will be held in 2023 alongside the Energy Geoscience Conference in Aberdeen where it is hoped many of the subsurface community gathered to discuss the geosciences in the transition will be able to come along and celebrate the achievements of their colleagues in a social setting. Please keep an eye out for more information about the 2023 awards nominations and Annual Dinner event coming soon.

The Energy Group Award for 2022 was awarded to a very worthy winner in Professor Stuart Haszeldine of Edinburgh University, whilst the Early Career Energy Geoscientist award went to rising star Dr Munira Raji of the University of Plymouth.

Energy Group Medal - Professor Stuart Haszeldine

Proposed by John Howell, Supported by Mark Wilkinson

Stuart Haszeldine OBE is the Professor of Carbon Capture and Storage at Edinburgh University. He moved to Edinburgh in the late 1990's and was the World's first Professor of CCS and one of the first academics to seriously tackle the problems associated with CO2 storage in the subsurface. He is the PI on the UK Carbon Capture and Storage Research Centre valued at £12.5M, with 400 academic members, and Director of Scottish Carbon Capture and Storage. He advises the Scottish Government on energy and environment in the Industry Liaison Group reporting to the Energy Minister and served as adviser to UK Government DECC Chief Scientist 2011-14. He is a science and technology reviewer and adviser for Innovate UK, The Crown Estate, Energy Technologies Institute, and is a UK member of the Zero Emissions Platform in European Parliament and represents the UK in the 5 nation North Sea Basin Task Force. He has published extensively on diagenesis and CCS with over 250 published articles.

He has been a passionate and prolific advocate of CCS at very high levels within industry and academia . He has featured frequently in the media (TV and radio) and has made significant contributions to the political debate at high levels, within the Scottish and UK parliaments. He was awarded the Geological Society William Smith Medal for Applied Geology in 2011, and in 2012 was appointed OBE for services to climate change technologies.

Early Career Geoscientist Award. - Dr Munira Raji

Proposed by Michael Kehinde, supported by Lukman Johnson

Dr Munira Raji is a Research Fellow in Sustainable Geoscience at the University of Plymouth. She completed a PhD in Geological Sciences at Durham in 2018. Munira is an outstanding interdisciplinary geoscientist who skilfully brings different strands of expertise and passion to the energy transition and sustainable development goals and significantly impacts the field. Munira is very visible at the forefront of creating awareness and engaging publicly on the role of geoscientists in energy transitions and the SDGs and has successfully given several invited seminars and keynote presentations on these topics in the UK and overseas.

Munira is selflessly dedicated to promoting Social Justice, Equity, Diversity and Inclusion in Geoscience in a very inspirational way. She has helped develop resources and workshops, outreach programmes, and public engagement to make Geoscience more inclusive and equitable in the UK and overseas. Her advocacy for using Science Diplomacy tools to accelerate a Just Energy Transition and the SDGs for emerging economies is exemplary. Munira co-founded "Black in Geoscience", an online group that amplifies, promotes and encourages Black Geoscientists, whilst creating awareness in geoscience in B.A.M.E. communities. Munira is an emerging leader and gender role model for young geoscientists, full of infectious energy, optimism and enthusiasm.

2021 Financial Report.

In 2022 the Energy Group has returned a surplus of £27,976 to the Geological Society. The surplus was ahead of the original 2021 budget forecast of £23,200 as a result of:

- higher delegate income and sponsorship from the Applicability of Hydrocarbons Subsurface Workflows to CCS with 86 attendees and £10,000 sponsorship from Shell and ExxonMobil
- reduced conference costs from forecast due to the low expenditure in advertising (£21,000 forecast vs £1,600 actual)

Despite this strong surplus from the conferences, a lower final surplus was obtained as a result of a loss from the Energy Group dinner (-£5,451) due to the low number of tickets sold for the event. The Energy Group will incorporate the learning lessons obtained from this even into upcoming Annual Dinners.

We thank our corporate sponsors BP and Equinor for their continued support. As we moved into 2023, the Energy Group will be 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.

	2021 Forecast	2021 Actual	2022 Forecast	2022 Actual	2023 Forecast
Income					
Conference Income	£ 77,950.00	£ 99,235.00	£ 92,000.00	£ 87,559.00	£ 70,000.00
Annual Dinner		£ 14,150.00	£ 24,000.00	£ 7,900.00	£ 30,000.00
Corporate Affiliate Sponsorship	£ 22,000.00	£ 22,000.00	£ 22,000.00	£ 22,000.00	£ 22,000.00
Total	£ 99,950.00	£ 135,385.00	£ 138,000.00	£ 117,459.00	£ 122,000.00
Expenditure					
Conference Costs	£ 40,900.00	£ 15,433.00	£ 53,900.00	£ 35,327.00	£ 23,000.00
Publications	£ -	£ -	£ -	£ -	£ -
Dinner Expenses	£ -	£ -	£ 24,000.00	£ 13,351.00	£ 30,000.00
Administration	£ 39,900.00	£ 35,000.00	£ 36,900.00	£ 40,805.00	£ 38,200.00
Total	£ 80,800.00	£ 50,433.00	£ 114,800.00	£ 89,483.00	£ 91,200.00
Net Surplus/Deficit	£ 19,150.00	£ 84,952.00	£ 23,200.00	£ 27,976.00	£ 30,800.00

Table 1 Energy Group Accounts- 2021-2022

Petroleum / Energy Group Publications

Three Special Publication were published in 2022:

- SP494: Cross Border Themes in Petroleum Geology I: The North Sea
- SP494: Cross Border Themes in Petroleum Geology II: Atlantic Margin and Barents Sea

- SP527: Core Values: The Role of Core in 21st Century Reservoir Characterisation (online first)

One Thematic Set was published via Petroleum Geoscience:

- Geopressure: Managing uncertainty in geopressure by integrating geoscience and engineering (online first) – following the very successful 2021 conference



Looking forward

In 2023 a diverse program of events that are planned.

- Natural Hydrogen
- CCS Storage and Efficiency
- Janet Watson Stratigraphy (Co-Badged)
- Tectonic Stress
- 10th UK Geothermal Symposium
- Seismic Imaging

In the future we will continue to offer all Energy Group events as a hybrid format of virtual and in-person attendance. Despite the great success of in-person attendance in 2022 (340 in person delegates out of a total of 541 delegates) we believe that by hosting hybrid conferences 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

Ingrid Demaerschalk – Ingrid Solutions
John Howell – University of Aberdeen
David McNamara – University of Liverpool
Edward Prescott – Impact Oil & Gas
Alex Reid – Equinor
Douglas Watson – University of Aberdeen

2022 – 2023 Officers of the Energy Group Committee

The following were appointed as officers of committee for the period 2022 – 2023.

Mads Huuse – Chair (University of Manchester)
Ivan Fabuel-Perez – Treasurer (ExxonMobil)
Tina Lohr – Publications Officer (ERCE)
Helen Robinson – Communication Officer (University of Glasgow)

Joining Committee Members

The following were appointed to the committee for the period 2023 – 2025.

Stuart Gilfillan – University of Edinburgh
Eleanor Rollett – RPS Energy
Munira Raji – University of Plymouth
Michele Martins – Global Maritime
Nick Lee – PGS
Chris Lloyd – Equinor

Ivan Fabuel-Perez

Energy Group Treasurer