

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

8-9 September 2022

*The Geological Society, Burlington House, Piccadilly London & Virtual*

## Provisional Programme

Day One	
08.30	Registration
08.50	Welcome.
	<b>Session One: Basin- and margin-scale processes; learnings and applications to resource plays.</b>
09.00	<b>KEYNOTE: The impacts of volcanism in sedimentary basins</b> Nick Schofield, <i>University of Aberdeen</i>
09.40	Prolonged multi-phased magmatism and its effects on basin evolution from rift to drift – the case of the Austral South Atlantic Ken McDermott, <i>Shell</i>
10.05	Lava delta formation and implications for sedimentary systems in volcanic basins Sverre Planke, <i>VBPR</i>
10.30	<b>BREAK</b>
10.50 Virtual	<b>KEYNOTE: CO<sub>2</sub> mineral storage in basaltic rocks</b> Sandra Snæbjörnsdóttir, <i>Carbfix</i>
11.30	Exploration screening workflow in the search for native hydrogen and helium Carolina Olivares, <i>CGG</i>
11.55	Mapping the Earth's Igneous Record: The complex interaction of tectonics, crustal architecture and basin dynamics Paul Markwick, <i>Knowing Earth</i>
12.20 Virtual	<b>POSTER INTRO: Petrogenesis and geodynamics of Eocene alkaline intrusions in the pre-salt sedimentary sequence of Santos Basin, Brazil</b> Viktor Souto Louback, <i>Federal University of Rio de Janeiro</i>
12.25	<b>LUNCH</b>
13.00	Poster Session, Lower Library
	<b>Session Two: Igneous processes and their impact on reservoirs.</b>
13.30	<b>KEYNOTE: Sediment-hosted geothermal systems: Review and first global mapping</b> Monia Procesi, <i>Istituto Nazionale di Geofisica e Vulcanologia</i>
14.10	Lessons learnt from the impact of volcanoclastic rocks on hydrocarbon systems and their application to CO <sub>2</sub> storage Simon Passey, <i>CASP</i>
14.35	Investigating the potential for CO <sub>2</sub> storage in the North Atlantic Igneous Province: Reservoir properties and reactivity of the Faroe Islands Basalt Group Marija Rosenqvist, <i>The Njord Centre</i>
15.00	<b>BREAK</b>

15.20	<b>Interaction between volcanic and non-volcanic systems and its implication for prospectivity in the Faroe-Shetland Basin, Northeast Atlantic continental margin</b> <i>Heri Ziska, Faroese Geological Survey</i>
15.45	<b>Characterizing lava flow reservoir sequences: insights from global examples</b> <i>John Millett, VBPR</i>
16.10	<b>The impact of Etendeka flood basalts on the diagenesis of the fluvio-aeolian Jurassic Etjo Formation, Namibia</b> <i>Eric Salomon, Geozentrum Nordbayern</i>
16.35	<b>The role of volcanism in the deposition, diagenesis, and hydrothermal alteration of Aptian Pre-Salt reservoirs from Brazilian offshore basins</b> <i>Bruno Eustáquio Moreira Lima, Petrobras</i>
17.00	<b>Island Dolomitization in the Cretaceous Calcitic Ocean: A New Insight on the Role of Volcanism in Carbonate Dolomitization</b> <i>Mahmoud Samir El-Yamani, Imperial College London</i>
17.25	<b>End of day one</b>
17.35-18.30	<b>Drinks reception – Lower Library</b>

Day Two	
08.40	<b>Registration</b>
08.50	<b>Welcome</b>
	<b>Session Three: Heat and basin analysis – the impact on resources.</b>
09.00 Virtual	<b>KEYNOTE: Role of igneous intrusion in controlling gas migration and contaminant charge in the UKCS</b> <i>John Underhill, University of Aberdeen</i>
09.40	<b>Are all basement fault zones the loci of geothermal heat? A paradoxical, but still economically significant, case study from the Southern North Sea</b> <i>Tiago Alves, Cardiff University</i>
10.05	<b>The first evidence of lower crustal intrusion beneath the Faroe-Shetland Basin</b> <i>Lucinda Layfield, University of Aberdeen</i>
10.30	<b>BREAK</b>
10.50	<b>The Phonolites of the Kerio Valley Basin: Characterising a competing fluvio-lacustrine &amp; alkali-rich volcanic succession within a frontier hydrocarbon exploration realm of the East African Rift</b> <i>Robbie Cowan, Tullow Oil</i>
11.15	<b>Greenstones as a source of hydrogen in sedimentary basins</b> <i>Ian Hutchinson, Kraaivlei Consulting</i>
11.40	<b>Understanding volcanic margin prospectivity; insights from the north and south Atlantic margins</b> <i>Dougal Jerram, CEED (University of Oslo)</i>
12.05	<b>The Impact of Hydrothermal Vent Complexes on Volcanic Basin Prospectivity</b> <i>Ben Manton, VBPR</i>

12.30	<b>The thermal impact of igneous intrusives and Cenozoic unroofing in northern West of Shetland: an integrated study based on seismic mapping, new geochemical analyses and basin modelling</b> Callum Leighton, <i>BP</i>
12.55	<b>LUNCH</b>
	<b>Session Four: Unlocking resources; data, case studies and operations.</b>
13.35	<b>KEYNOTE: Tools for understanding how igneous systems affects energy resources and storage potential of sedimentary basins</b> Craig Magee, <i>University of Leeds</i>
14.15 Virtual	<b>The impact of igneous rocks on petroleum exploration and drilling operations in the Northern Carnarvon Basin, Western Australia</b> Michael Curtis, <i>University of Adelaide</i>
14.40	<b>Assessing the Application of Ultradeep Electromagnetic Resistivity Tools to Detect Igneous Formations and Their Associated Hazards Ahead of the Bit</b> Leanne Smart, <i>Schlumberger</i>
15.05 Virtual	<b>Buried volcanoes as prospective sites for in-situ safe carbon storage</b> Ricardo Pereira, <i>Universidade de Lisboa</i>
15.30	<b>BREAK</b>
15.50 Virtual	<b>Exploratory history of the igneous reservoirs of the Rio Grande Valley (Mendoza), Neuquén Basin (Argentina)</b> Luis Rebori, <i>Consultant Geologist</i>
16.15	<b>The direct effects of emplacing basaltic lava onto a sand substrate: implications for petroleum reservoirs in sub-basalt and intra-basalt situations.</b> Clayton Grove.
16.40	<b>Overthickening on the Norwegian Volcanic Margin: estimating intrusion thicknesses to resolve palaeogeographic uncertainty</b> Lauren Chedburn, <i>University of Aberdeen</i>
17.05	<b>The influence of sediment thermal maturity and hydrocarbon formation on Hg behaviour in the stratigraphic record</b> Asri Indraswar, <i>University of Oxford</i>
17.30	<b>Closing remarks</b>
18.00	<b>End of conference</b>

<b>Posters</b>
<b>Magmatically driven hydrocarbon generation and fluid flow in the Namibe Basin of Angola</b> Edoardo Fiordalisi, <i>University of Manchester</i>
<b>Exploring links between the North Atlantic Igneous Province and Paleocene–Eocene climate change using sedimentary mercury</b> Joost Frieling, <i>University of Oxford</i>
<b>Intrusion emplacement and the interaction with the petroleum system on the North Rona Ridge</b> Alice Hall, <i>University of Aberdeen</i>
<b>Emplacement and magma plumbing system of the Mesoproterozoic Derim Derim Dolerites, McArthur Basin, Northern Australia</b> Simon Holford, <i>University of Adelaide</i>

**Petrogenesis and geodynamics of Eocene alkaline intrusions in the pre-salt sedimentary sequence of Santos Basin, Brazil**

Viktor Souto Louback, *Federal University of Rio de Janeiro*

**Tempo and distribution of Mesozoic magmatic activity in the Browse Basin, Australian Northwest Shelf**

Kosuke Tsutsui, *University of Adelaide*

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