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Hydrocarbon Prospectivity of the Northern Emirates

6 APRIL 2021 • ONLINE

- **Programme**

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TECHNICAL COMMITTEE

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EVENT OVERVIEW

The allochthonous thrust sheets that form the Hajar Mountains which extend into the UAE from Oman form a rocky spine to the Northern Emirates. Representation of the geology of the whole Arabian Platform can be viewed in outcrop from the Middle Cretaceous through to the Permian. The mountains form a spectacular backdrop for those who want to see the components of the highly prolific petroleum systems of the Middle East. While most of the hydrocarbons that have been exploited from these systems are from other better developed areas from Abu Dhabi to Kuwait, the Northern Emirates provide as yet mainly untapped potentiality waiting to be unlocked with the use of new exploration techniques.

The recent 2020 large Mahani gas discovery in Sharjah testifies to this as does the acquisition in the period over 2018-2020 of high quality 3D seismic over most of the Ras Al Khaimah exploration blocks both on and offshore. Increased operational activities has led to a new focus which has captured the interest and commitment of foreign IOC's and national companies to explore along with national partners in these areas to discover, develop and produce the hydrocarbons (mainly gas) that the developed economy of the UAE needs to forge ahead in its continued dynamic growth seen over the last 50 years and projected into its future.

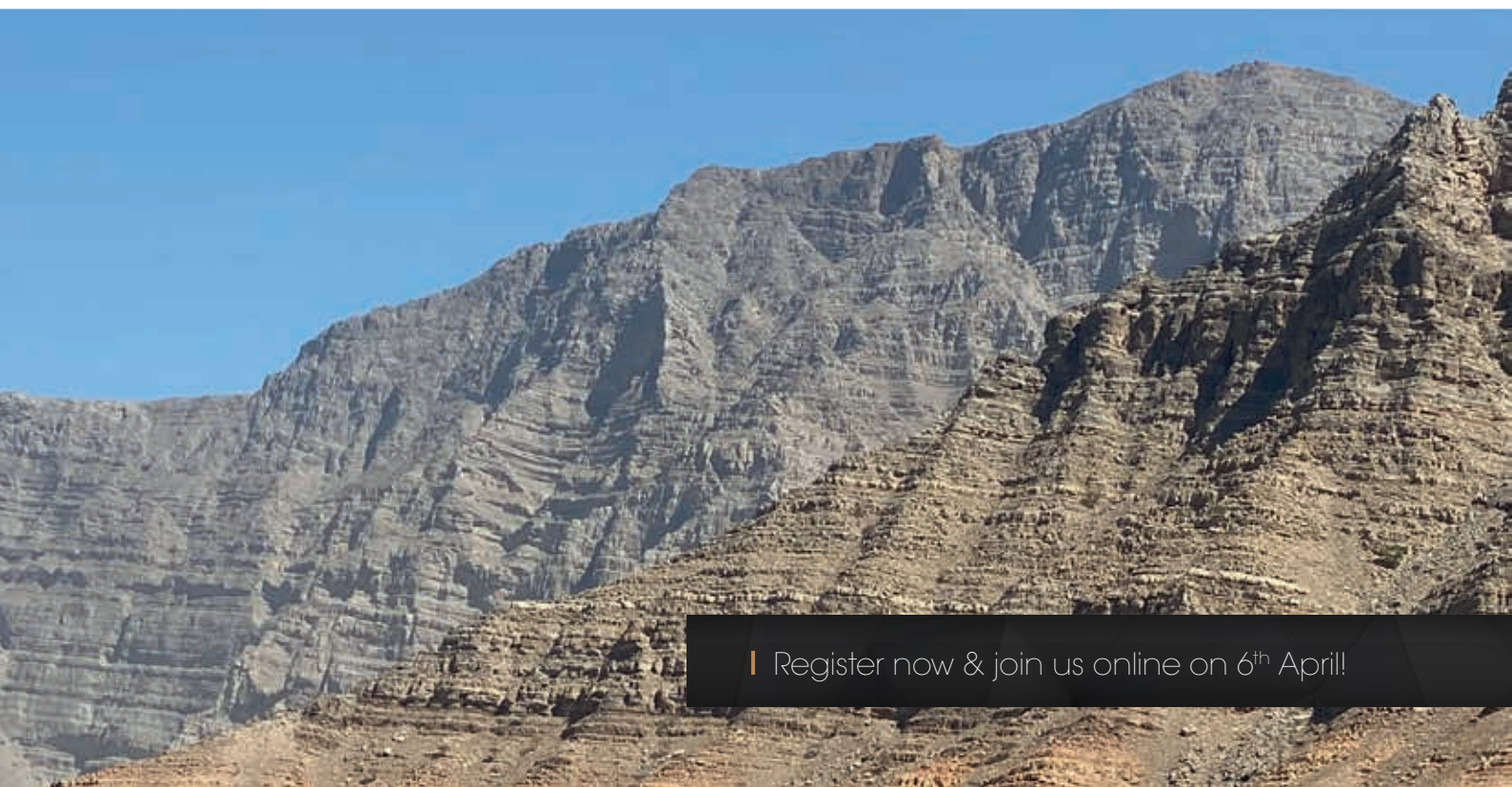
Classic carbonate plays such as the Wasia and Thamama (Shuiaba) formations are also proven in the Northern Emirates with a number of producing fields in the tectonically compressional onshore areas to the mainly extensional offshore areas. The best quality reservoirs are typically grainstones and rudstones deposited in a shallow water higher energy environment.

Other play types include the Middle and Upper Jurassic Neyriz and Musandam Unit 3, carbonate reservoirs and are sourced possibly also by late Jurassic and or Silurian, this play is proven with the giant Sajaa Field. A developing play the Pabdeh calciturbidites sourced by the Aruma and Pabdeh shales could provide huge potential as it will be much better imaged and then exploited with the integrated use of the new 3D seismic using Play Based Exploration (PBE) techniques.

There are a number of other regionally proven plays that could be prospective, including the Bih Formation (Khuff) sourced by Silurian Qusaiba to Oligocene Asmari Oolites and shallow marine sandstones.

Exploration for new resources can focus on allochthonous and autochthonous thrust sheets whether on frontal thrusts or in foredeep basins and beyond this into a classic rift tectonic setting with trap formation often related to salt withdrawal and collapse.

This online event will share some of the latest research and also will be used to showcase some of the recent exploration successes as well as prospectivity that is currently being detailed in ongoing exploration activity in the area. This is supplemented by studies of the magnificent local geology that can be used as direct analogs for these activities.



| Register now & join us online on 6th April!

TECHNICAL PROGRAMME

All times are as per UAE local time (GMT+4)

Oral Presentations | Tuesday 6 April

10:00	Opening Address by Masoud Al Hamadi (SNOC)
Session 1: Introduction to the Northern Emirates: prospectivity, geological setting, petroleum system(s) Session Chair: M. Sarssam (SNOC)	
10:10	Systematic review of the play concepts in the Emirate of Ras Al Khaimah: an effective paradigm to appreciate the exploration potential of the Northern Emirates domain - G. Firpo ¹ ¹ RAK Gas
10:35	Regional Geology of the Oman Mountains Fold and Thrust Belt, Insights from Seismic and Well data in the Emirate of Sharjah, UAE - C. Thurley ¹ ¹ SNOC
11:00	Petroleum Systems of the Northern Emirates - C. Kierdorf ¹ ¹ APT
11:25	Break
Session 2: Analysis of the structural styles and their implications on exploration strategies Session Chair: H. Banihashim (SNOC)	
11:35	Eni approach to support the hydrocarbon prospectivity assessment through integrated multiscale structural and gravity analysis: the offshore RAK case study - L. Spaggiari ¹ , F. Di Falco ¹ ¹ Eni
12:00	Tectonostratigraphic Evolution of the Sohar Basin, Exploration Concepts and Emerging Plays Offshore the UAE's East Coast - C. Thurley ¹ ¹ SNOC
12:25	New Opportunities for Exploration and Production in the Northern Emirates; the important role of outcrop geology from well to prospect scale - J. Van Dijk ¹ ¹ OCRE Geoscience Services
12:50	Break
Session 3: The spectacular outcrops of the Musandam Peninsula: a key tool to develop exploration concepts Session Chair: T. Burckhart (RAK Gas)	
13:00	Structural styles and evolution of the Musandam peninsula: new insights from outcrops in northern Oman Mountains (UAE, Ras Al Khaimah) - M. Tarapoaanca ¹ ¹ Danubian Energy
13:25	Inferring Prospectivity in the Northern Emirates from Surface Geology Observations: Implications for Exploration and Development - R. Lazar ¹ ¹ GeomodL
13:50	The Wasia Group carbonates prospectivity in the Northern Emirates - P. Swire ¹ ¹ RAK Gas
14:15	Break
Session 4: Frontier technologies and exploration workflows to unlock the potential of the Northern Emirates Province Session Chair: A. Cozzi (Eni)	
14:25	Cutting-edge technologies and integrated workflow for velocity model building and imaging in a geologically complex area – A Case Study (Onshore Sharjah – UAE) - D. Maggi ¹ ¹ Eni
14:50	Re-activation, Buttressing and Bulldozing. Implications of Cretaceous and Cenozoic Tectonics on the Petroleum Potential onshore Sharjah, UAE - M. Cowgill ¹ ¹ CGG



15:15	Pore pressure profile characteristics in Northern Emirates - M. Kepiński ¹ ¹ PGNiG
15:40	Open Discussion
16:10	Closing Remarks & End of event

REGISTRATION

REGISTERED AND PAID

EAGE Member	€ 125
Non-Member	€ 225
EAGE Student Member	€ 75
Student Non-Member	€ 100

Members please note: To qualify for the member registration fee, your EAGE membership dues for 2021 must have been paid and confirmed. The processing time for membership applications or renewals is 10 working days.

To qualify for the reduced student registration fee:

- Students must be enrolled in a full time study programme at a recognized university or institute
- The registration must be accompanied by a copy of a student ID card and/or official proof of enrolment

The Non-member fee includes EAGE membership for the remainder of 2021. This membership will be activated shortly after the event.

Student Non-members cannot be older than 34 years of age (when registering).

All fees are in Euros (€). One Euro of your total registration fee is donated to the EAGE Green Fund.

EAGE reserves the right to cancel the event due to low participation. In this case, payment will be refunded in full.

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CONTACT

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