EUROPEAN REGION NEWSLETTER

Unlocking the Future

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TABLE OF CONTENTS

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PRESIDENT'S MESSAGE

Dear Reader,

Welcome to the latest edition of the European Region newsletter. The first quarter of the year is always a very busy time for the European Region with many excellent events held during the first months of 2014 - all indicators of the health of this Region and its activities. In the previous newsletter I focused on the work of some of our Student Chapters and Young Professional (YP) groups and this will be a continuous red thread to follow throughout my editorials. The nature of these two vital groups dictate that students graduate and young professionals move beyond the limits of the region to further their careers. This has been the case for both Ruairi McDonald and Florentina Enea and I would like to take this opportunity to thank them for the enthusiasm and dedication that they brought to their past roles as the Region YP and Student Chapter representatives. Their departure from these roles does however, give me the pleasant task of welcoming Sam McLay and Camile Poli to the team as, respectively, the new European Region Young Professional and Student Chapter representatives. We have an exciting program of activities planned for both of these groups and I look forward to working with Sam and Camile over the coming months.

My review of Q1 begins with the European Region semi-finals of the IBA competition which were held during the first week of March. This year was the largest ever IBA event with 26 teams from 14 different countries gathering in Prague. The size of the competition meant that we broke with tradition and had two teams of judges who then came together to undertake the unenviable task of deciding on their top four teams. These teams then presented again before the full cohort of judges and event attendees in a packed auditorium during the final afternoon. At the end of two days of intense competition the team from IFP, Paris were declared the winners and will go forward to represent the European Region in the Grand Final during the Annual Conference in Houston next month. The winners were followed very closely by the University of Manchester who placed second, with the Universities of Aberdeen and Stavanger in third and fourth place respectively. My congratulations and thanks go out to all the competitors for making this the most successful IBA semi-finals ever and for demonstrating the three qualities which as an organisation we aim to foster amongst our membership;

- A genuine enthusiasm for learning and great geoscience.
- A pro-active "can-do" mentality which will serve the participants well in whichever direction their future careers may take them.
- A clear desire to work collaboratively with an acknowledgement that we are all more efficient and creative (and have more fun) in groups rather than as individuals.

The successful organisation of an event of this scale depends upon the hard work and dedication of the London Office staff – Fionn, Anisha and Francesca led by Jeremy Richardson - and a strong cohort of volunteer organizers, faculty members, mentors and judges. I would particularly like to thank Dave Cook, Charlie Hamilton, Vlasta Dvorakova and John Brooks who are the AAPG volunteers whose drive and enthusiasm makes the IBA competition a consistent highlight of the AAPG year and Daniel Steffen for leading the excellent team of judges.

Before the London office staff had time to unpack on their return from Prague they were organising the International APPEX prospect fair in the Business Design Centre in London the following week! This was also the largest event of its kind for our region with over 70 exhibitors, 35 sponsors and 690 delegates. Two records broken in two weeks!! Enormous credit goes again to Jeremy and the team in the AAPG Europe office for organising this superb event which is a true reflection of the AAPG DNA – a marriage of excellent geoscience applied to the business of finding oil and gas.

We were delighted that both the current Global President of the AAPG, Lee Krystinik and Executive Director David Curtiss were able to join us at APPEX and at our ERC meeting during that week. This gave them the opportunity to see the range and scope of activities that the 3,000+ membership of our region are engaged in during the year. During this meeting I was delighted to review and approve financial support for five excellent educational events proposed by student chapters from France, Hungary, Poland, Romania and the United Kingdom. Our AAPG visitors were particularly impressed by the collaborative proposals of our Hungarian and Romanian Student Chapters who have a sequence of excellent events which are the result of close co-operation over a number of years. This opportunity to network with your peers is a key differentiator of a global organisation such as the AAPG and a key value proposition for both existing and prospective members.

The exciting line up does not end now, however, and the Region will be busy hosting more things throughout the year. Next week the region is organising a 3 day conference on Tethyan Carbonates in Naples with presentations from leading academics and IOCs active in these plays; the Annual European Region Conference will be held again this year in Barcelona from 14-16 May; and the region is also hosting this years' AAPG International Conference which will be held in Istanbul from 14-17 September. The latter has attracted over 850 abstracts (the highest number ever for an AAPG International Conference) and will consist of 7 parallel technical sessions with some excellent short courses and field trips scheduled to take place before and after the conference. The program will also include technical sessions dedicated to the memories of two great European geoscientists and supporters of the AAPG, Professors David G. Roberts and Peter Ziegler, who both recently passed away.

All of these fantastic activities depend upon the enthusiasm and expertise of AAPG member volunteers. I hope that those of you who have been fortunate enough to attend any one of these meetings in the recent past have been sufficiently motivated to continue to support AAPG events in the future. There are so many roles to fill in the organisation of these major conferences that all offers of assistance will be greatly appreciated by both the ERC and London Office. I hope to meet as many of you as possible at one of these excellent events scheduled for the coming months.

Stay safe and happy.

Keith Gerdes
AAPG European Region President

Would Integrated Stratigraphic Geomodels Resolve The Challenges of Frontier Hydrocarbon Provinces? The Case of the Levant Basin

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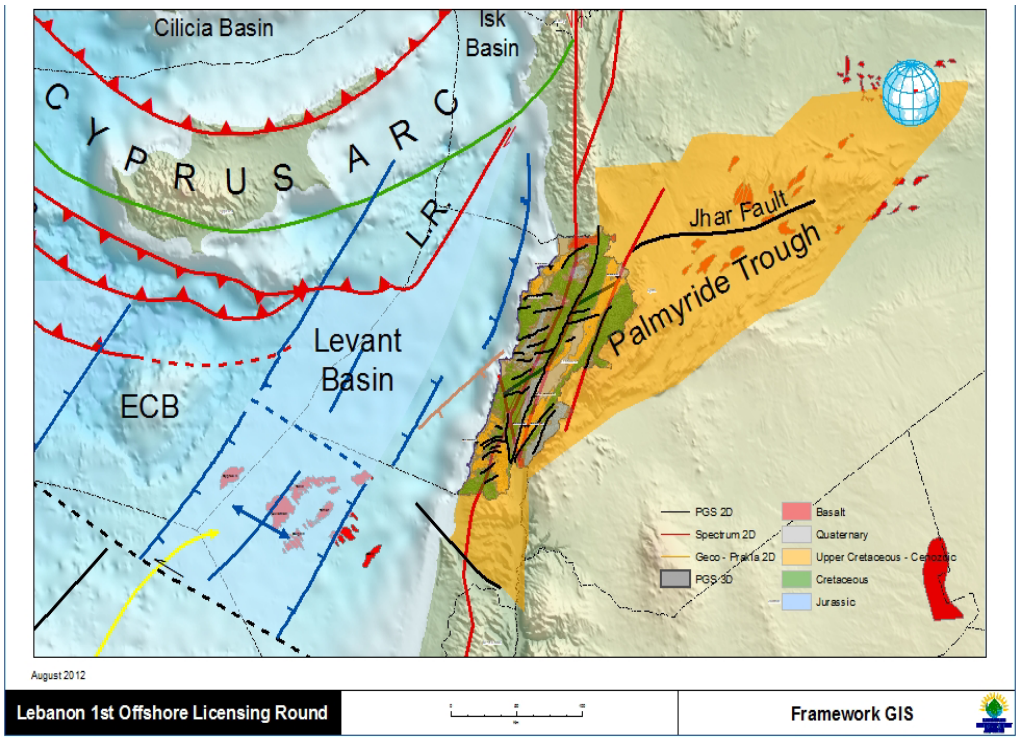

Fig. 1. Schematic structural map of the Levant Basin showing the major discoveries offshore Israel and Cyprus and the onshore fields in Syria (in the Palmyride Trough). The map is after Montadert et al. (2010) and taken from the Lebanese First Offshore Licensing Round Framework GIS Package (http://www.lpa.gov.lb).

A NEW HYDROCARBON PROVINCE

Today, the Levant Basin – located in the East Mediterranean region – represents a new Frontier Gas Province. Offshore discoveries in this basin (e.g. Mari-B, Tamar, Dalit, Leviathan, Tanin, Karish, and Cyprus-A) have confirmed the presence of gas accumulations in subsalt Lower Miocene sandstones (exceeding 38Tcf of recoverable reserves). The East Mediterranean region remains, nevertheless, burdened with a complex geodynamic, tectono-stratigraphic history and high exploration costs (deep offshore drilling, sub-salt reservoirs).

Frontier hydrocarbon basins are commonly associated with risky and rather expensive exploration. A very limited number of wells generally exist and seismic data constitute the key information that is available for evaluating the basins' architecture and sedimentary filling history (and subsequently its prospectivity). Here robust geological concepts and uncertainty analyses become crucial tools for sound economic assessment.

The origin of the Levant Basin (as a part of the NeoTethys) has been ascribed to the Permo-Triassic fragmentation of Pangea. Sedimentary filling therein was influenced by several tectonic events including the closure of the Neo-Tethys, pulsating compressive folding (previously called "Syrian Arc Deformation"), and strike-slip faults associated with the separation of the African and Arabian Plates. Impacts of such tectonic history on the distribution of sedimentary facies (source-, reservoir-, and sealing rocks) remain difficult to comprehend, and need appropriate numerical modeling before successful drilling. New seismic data confirm that the southern part of the Levant Basin (offshore Sinai, Israel) is significantly different from the northern part (offshore Lebanon, Cyprus). Indeed, the latter could be associated with a western extension of the southern Palmyride zone, denoting thicker Upper Cretaceous – Cenozoic rock successions, and thicker underlying crustal segment invoking thin-skinned tectonics. Three distinct domains across the northern Levantine basin/ margin (Lebanon) have been illustrated in Nader (2011): deep basin offshore, margin offshore, and margin onshore. The latter domain being correlated with the inland Palmyride Trough (see Fig. 2). Such domains align with recent results of seismic interpretation and basin modeling provided by a series of academic projects (MSc and PhD theses; Hawie et al., 2013; Bou Daher et al., 2014; Ghalayini et al., submitted).

New ideas have emerged from recent studies regarding source-to-sink approach for filling the basin with relatively thick sedimentary packages, in-depth structural investigation of the mechanisms and timing of observed faults and folds, and geochemical analyses of outcropping source rocks (Hawie et al, 2013; Ghalayini, submitted; Bou Daher et al., 2014; and references therein). Integrating all such information in one geomodel will provide a powerful tool to test geological concepts and to de-risk the continuing exploration of such a frontier province.

TOWARDS AN INTEGRATED STRATIGRAPHIC GEOMODEL

An emerging frontier hydrocarbon province, with risky off-shore subsalt exploration and production, presents numerous challenges. One of which, may be seen by far as the most important, concerns the lack of available data – especially in distal parts of the basin (offshore). Classically, the lack of data is met with adequate regional studies and comprehensive synthesis (Fig. 3) taking into account the scarce available information, which is then extended to unknown areas through extrapolation. This is based on the state-of-the-art concepts of geology and basin analysis. In frontier offshore basins, reflection seismic data (2D and 3D) among other geophysical techniques are often being used extensively. Yet even with relatively robust geologic concepts and reasonable seismic-stratigraphic correlations, the lack of data prohibits crucial validations to limit uncertainties.

Various types of modeling have been therefore used in order to test a broad range of hypotheses. For instance, Gvirtzman et al. (2014) make use of IFPEN's Dionisos software package in order to constrain the major sediment sources responsible for filling the southern part of the Levant Basin (Fig. 3). Other types of numerical modeling at the basin-scale attempt to understand the distribution of organic matter, to apply structural restoration, or to infer

about the evolution of basinal fluids. Analog modeling (sand-box experiments) have also been used in order to constrain boundary conditions for the effects of tectonics on the basin architecture and geometries (Fig. 3).

An integrated stratigraphic geomodel includes the application of the above mentioned approaches and tools (Fig. 3). Hence, workflows are designed to make use of the regional synthesis of a frontier basin in order to construct a forward stratigraphic model. Then such model is used aiming to achieve best fit simulations associated to tests with other tools (e.g. sand-box experiments). Integrating a stratigraphic model with a petroleum system basin model will be the final stage, whereby the produced geomodel scenarios could be used in optimal conditions to better understand the investigated frontier hydrocarbon basin.

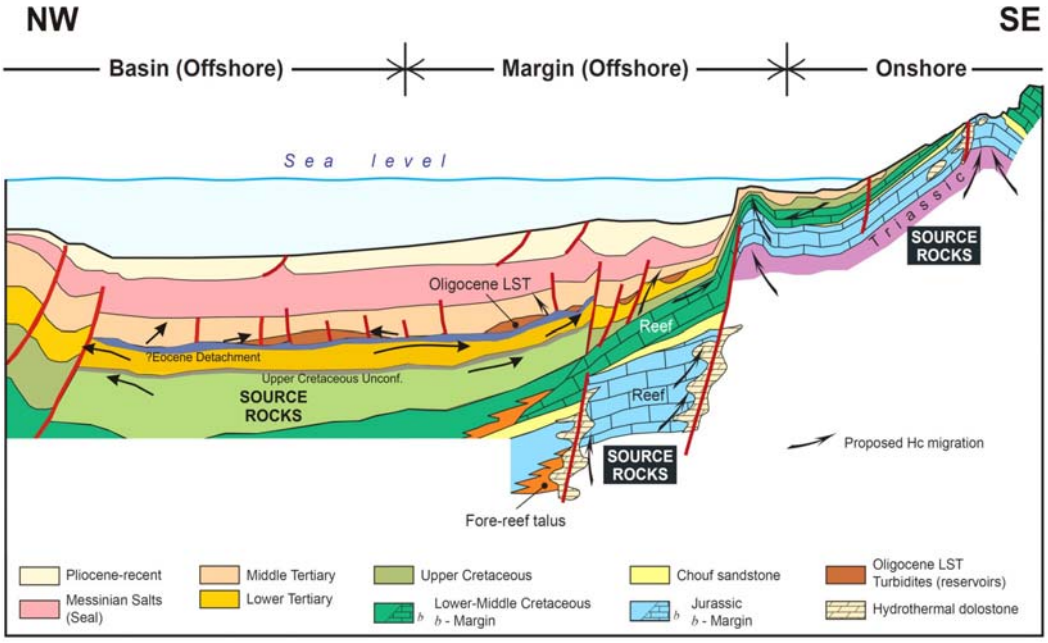

Fig. 2. Schematic petroleum system model for Lebanon (northern Levant Basin), with possible plays offshore, in the continental margin and onshore (Nader, 2011).

PACTS-BASINS R&D APPROACH

Today, the academic and industrial realms are faced with the needs to further upgrade research and development tools and workflows. Numerical modeling software packages are being continuously improved, and new requirements keep on emerging. Under the PACTS-Basins Research Program, IFPEN proposes to develop a methodology for evaluating source rocks maturity in frontier hydrocarbon basins with complex geodynamic tectono-sedimentary history, based on integrated stratigraphic basin geomodeling. The Levant Basin is believed to be an excellent application for the proposed approach.

In addition to the workflow presented above, this proposed research program will include uncertainty numerical modeling. Such tool will be used to constrain uncertainties where validation and calibration are lacking (namely in frontier hydrocarbon provinces). Uncertainty analysis may be considered as an adequate way to value the integrated geomodels in under-drilled frontier basins, paving the way for a less risky exploration.

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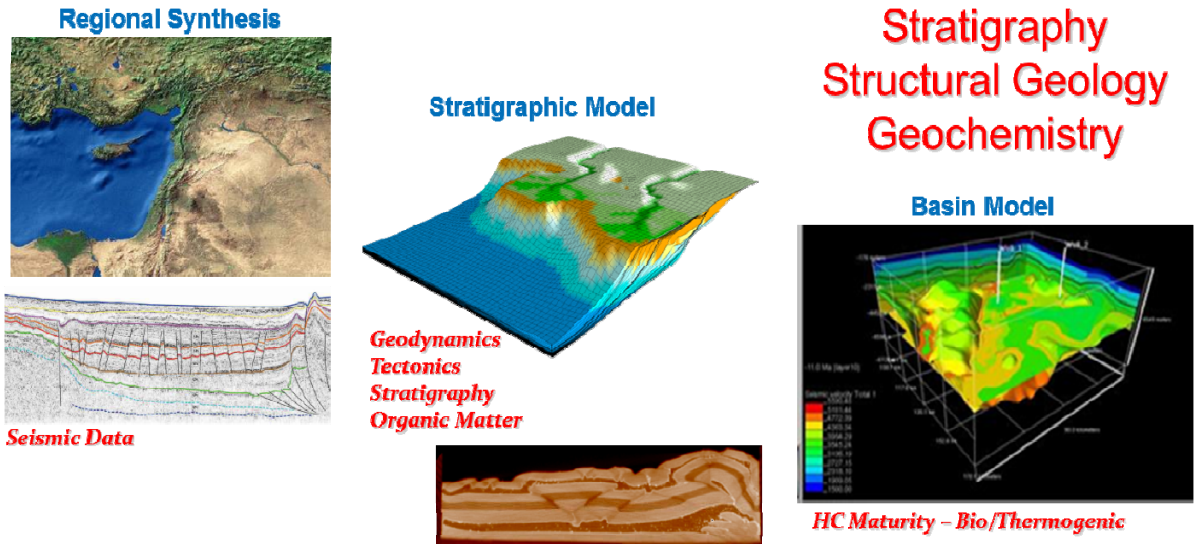

Fig. 3. Regional geologic synthesis (including seismic data interpretations; e.g. Hawie et al., 2013), stratigraphic and structural modeling (e.g. Gvirtzman et al., 2014), and petroleum systems basin modeling. Tools often used to test scenarios and limit exploration uncertainties.

In the Spotlight: the Hydrocarbon Potential of Albania

By Maxim Kotenev

The recent drilling in search of hydrocarbons performed by Royal Dutch Shell and Petromanas Albania in Molisht-Shpirag area near Berat in Albania has led to renewed interest in this rich hydrocarbon area.

Albania is located in the western part of the Balkan Peninsula at the eastern coasts of Adriatic and Ionian seas. Albania has common borders with Montenegro, Kosovo, Macedonia and Greece. It is characterized by a Mediterranean climate consisting of hot and dry summers with long days of sunshine, followed by mild and wet winters. The country is a Parliamentary republic with a population of 3.01 million people, area of 28748 km² with the capital in Tirana.

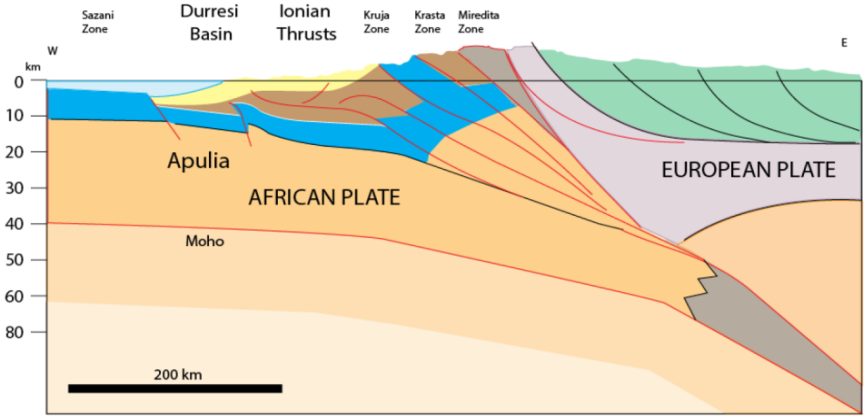

Figure 1 Albanian foreland fold and thrust belt system (Barbulushi, 2013)

HYDROCARBON OCCURRENCE

Albania was established as a hydrocarbon bearing province as early as Roman times, when heavy oil and asphalts of Selenica mine were used as fuel for lamps. In 1918 the oil was discovered in the Oligocene flysch in Drashovica. In 1927 and 1928 respectively, the Kucova and Patosi oil fields, related to Messinian clastic reservoirs, were discovered. Marinza, the biggest oil field in Albania, is related to Messinian-Tortonian clastic reservoirs. Visoka, the first oil field related to carbonate reservoirs (discovered in 1963), was followed by other discoveries such as Gorishti, Ballshi, Finiq-Krane, Cakran-Mollaj, Amonica and Delvina. The first gas discovery in 1963 in the Tortonian sandstone layers of Divjaka led to further discoveries such as Frakulla, Ballaj, Povelca, Panaja and Durres. The A4-1X well drilled in 1993 by AGIP and Chevron (Adriatiku-4 offshore) proved oil (condensate) and gas bearing in Messinian clastic reservoir. The first light oil discovery onshore Albania was made by Oxy in 2001 (Shpiragu discovery) after the drilling and testing of Shpiragu-1 well in the Sqepuri structure located in the Block 2 area.

Due to the intensive development of oil and gas fields production increased dramatically reaching a peak for oil, at 2.25 million tons, in 1974 and gas, 940 million Nm³, in 1982. In the 1980s crude oil production decreased to 1.4 million tons and it continued to decrease to 1.1 million tons in 1990. Albania has seen a drastic fall of oil production during the first half of 1990s reaching the bottom in 2000 with 0.32 million tons. Since 2000, however, there has been a gradual increase in oil production.

GEOLOGICAL FRAMEWORK

Situated in the western part of the Balkan Peninsula, Albania includes portions of the petroliferous Durres and Ionian sedimentary provinces. As an element of the southern branch of the Alpine folded belt and the Apulian plate, this area has experienced Mezosoic rifting and the Cenozoic collision of the European and African plates (Figure 1). Part of the southeast Adriatic region, the territory of Albania is characterized by the progressive advancement from north to south of overthrusting of the more external parts of the Dinaride-Hellenide (locally called Albanides) chains onto the Apulian-Adriatic foreland. The Adria plate or the Apulian-Adriatic foreland is made up of Permo-Triassic clastics and evapourites, Mezosoic carbonates overlaid by Tertiary carbonates and clastics. In Italy it is characterized by the gentle folding and by systems of normal faults. The Apulian-Adriatic foreland extends eastwards to Albania and may represent a rather deep prospective area offshore Albania. Albania is a part of the Mediterranean Alpine Folded Belt and fits in the Dinaric-Hellenic range between Dinarides in the north and Hellenides in the south (Figure 2).

The geological structure of the Albanides comprises two major units: the Internal Albanides in the eastern part and the External Albanides in the west. Deformation of the Internal Albanides took place by the end of the Jurassic and the beginning of the Cretaceous, whereas for the External Albanides this started during the Late Eocene and lasted into the Pliocene. During the Neogene large volumes of clastics were transported in the foredeep situated on the eastern margin of the Apulian plate.

The Internal Albanides are characterized by a developed magnetism and by the intensive tectonics which has led to the over-thrust and tectonic napes. The Internal Albanides are further subdivided from east to west into the Korabi, Mirdita, Gashi, Albanian Alps and Krasta-Cukali zones. The two post orogenic sedimentary (intermountainous) basins, Burreli Basin and Korca Basin, overlie trangressively the Mirdita zone and partially the Krasta-Cukali zone (Figure 3).

Figure 2 Regional setting of Albania (NANR, 2009)

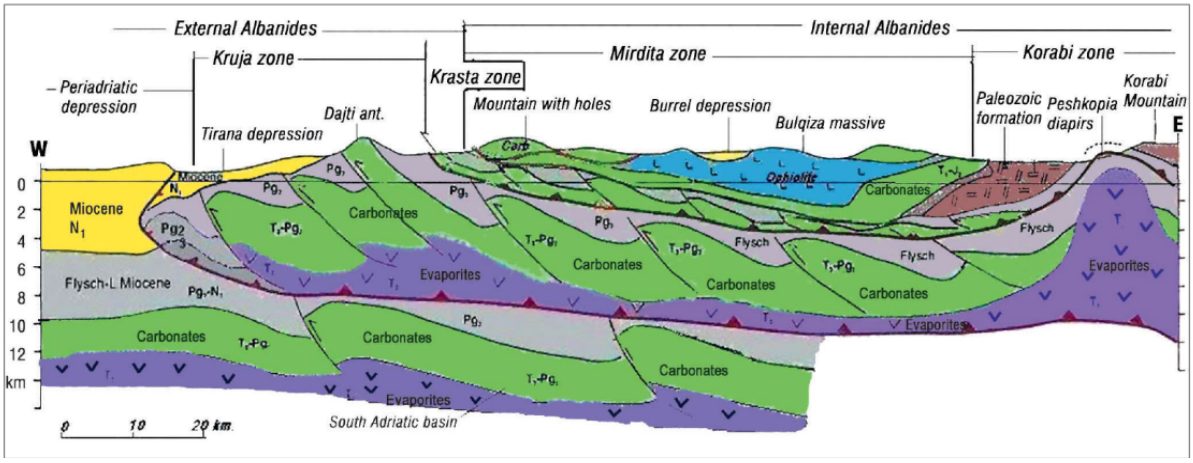

Figure 3 Schematic geological cross-section through the Albanides and South Adriatic Basin (Velaj, 2012)

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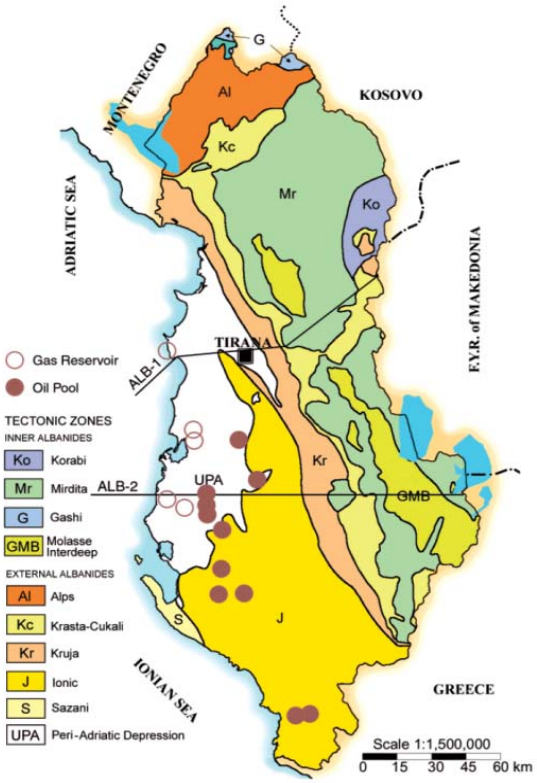

Figure 4 Schematic tectonic map of Albania and its oil and gas pools (Frasheri, 2005)

The External Albanides, despite being characterized by the lack of magmatism and by more regular structures than the Internal Albanides, are highly affected by a considerable thrusting of the tectonic zones and/or structural belts westwards. The External Albanides comprise the Krasta, Kruja, Ionian and Sazani zones and are characterized by successive folds thrusted westerly over the Adriatic (Apulian) foreland (Figure 4). The main thrusting phase that affected the Kruja zone took place during Middle / Late Oligocene and for the Ionian zone, during the Middle Miocene. In the central western part of Albania the overlying Peri-Adriatic Depression masks the Ionian and partly Kruja tectonic zones. The Peri-Adriatic Depression westwards offshore is unified with the South Adriatic Basin which overlays the Preapulian (Sazani zone) and Apulian platform. The uplifted foreland Sazani zone is located in the south-western part of Albania and outcrops in Karaburun Peninsula and Sazani Island. The Ionian zone is a major oil and gas province in Albania. It outcrops in the central south-western parts of the country and extends south onshore towards the western part of Greece. In the central-west part, the Ionian zone is overlaid by the post-tectonic Durres Basin.

TECTONIC STYLES IN ALBANIDES

The tectonic zones and their respective structural belts in Albanides have a general NW-SE orientation and thrust over one another from east to south-west direction. Except for the over thrusting in the south-west direction, some differential horizontal displacement occurred in Albanides, causing local rotation of the mountain fronts and the formation of mountain arcs. The Triassic evaporates formed the main slip planes for the overthrusting. Locally the thick Triassic evaporates not only played the role as slip planes, but also pierced as salt domes into flysch and/or molasses and in places reaching the surface, as is seen in the Dumrea salt dome.

The mountain fronts and fold belts, especially in the External Albanides, comprise the main features of a thrust system, including drag faults, back thrusting and triangle zones. Thrusting of tectonic zones and their structural belts or individual structures on one another westwards represents one of the main tectonic features in Albanides. Both the Shkoder-Peje lineament and Vloree-Elbasan lineament permeate the Albanides structure respectively in the north and in the central part with a SW-NE trending.

STRATIGRAPHY

Sediments ranging in age from Palaeozoic to Quartenary are encountered in Albanides. The Paleozoic metamorphic rocks consisting of terrigenous, effusive and rare carbonate rocks are encountered in the Internal Albanides (Korabi zone). The evaporitic formations, consisting of Permain-Triassic salts and anhydrites, are mainly encountered in the Korabi and Ionian

tectonic zones. The ophiolitic formations consisting of plutogenic and volcanic facies belong to the Middle to Upper Jurrasic and are widely spread in the Internal Albanides, especially in the Mirdita tectonic zone.

The carbonate formations, widely spread in both External and Internal Albanides, are represented by a variety of limestones and dolomites. The carbonate formations in the External Albanides (Ionian zone) are of Upper Triassic – Eocene age and are pelagic in origin. These units vary in thickness between 2100 – 2850 m. The flysch formation, the so-called "Early flysch" (Upper Jurrasic – Lower Cretaceous), is encountered in Krasta-Cukali and Mirdita zones; while the "Young flysch" (Maastrichtian - Eocene) was found in Krasta-Cukali and Albanian Alps. In Kruja and Ionian tectonic zones the flysch formation belongs to the Oligocene age and its thickness varies between 1000-3000 m, thinning westward.

The Pre-molasses formation, which consists of marls, marl clays, sandstone and lithotamnic organogenic limestone and belongs to the Acquitanian-Burdigalian-Early Serravalian, is encountered in the External Albanides, especially in the western part of the Ionian zone and Sazani zone. The thickness of Pre-molasses formation varies from 850 m in the east up to 2500 m in the west. The Middle Serravalian-Quartenary Molassic formation consists of a considerable number of sand-clayey mega-sequences, conglomerates, clastic limestone and clayey gypsum. It is widely spread in the Peri-Adriatic Depression and westward offshore in the South Adriatic Basin.

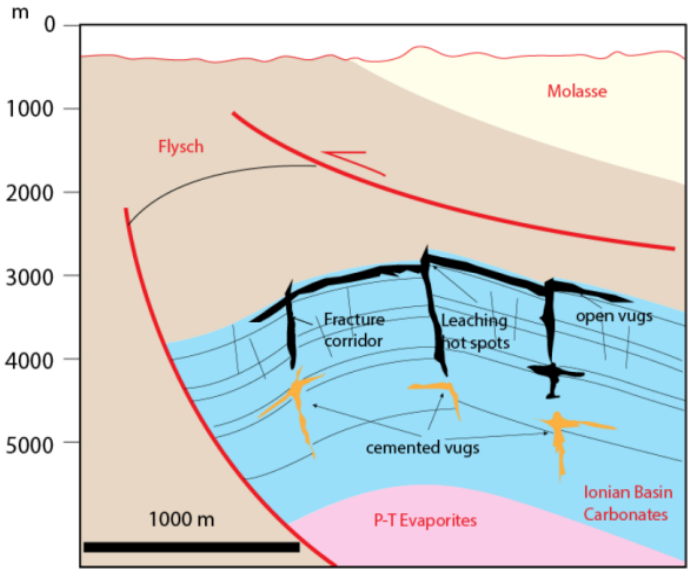

Figure 5 Fractured Late Cretaceous – Eocene reservoirs with predominantly vuggy porosity (Barbullushi, 2013)

OIL AND GAS PLAYS

Recoverable oil reserves are present in Neogene clastic reservoirs in the Durres Basin with further reserves in the Mezosoic-Paleogene carbonate reservoirs in the underlying Ionian zone succession. Most of the gas is produced in the Durres Basin and only one gas field (Delvina) is located in the Ionian zone. By contrast, most of the oilfields produce from reservoirs in the Ionian zone and only two have been found in the Durres Basin (Kucova and Patos-Marinza). Eight oilfields are located along the general trend of the Vlora-Elbasan lineament near the south-eastern margin of the Durres Basin. All of these fields are believed to produce from structural traps on the hanging wall of thrusts.

In the Ionian zone, source rocks which have been identified comprise Triassic – Liassic carbonates and shales of Middle Jurassic, Upper Jurassic and Cretaceous age. Reservoir rocks in both oil and gas fields mainly consist of Cretaceous-Eocene carbonates with <10% primary porosity. Sediment thicknesses are sufficient for source rock maturation and hydrocarbon generation. Porosity is improved by fracture development and oil is produced from interconnected fracture systems. Late Cretaceous – Eocene reservoirs are fractured with predominantly vuggy porosity (Figure 5). Many of the traps were completed when the Oligocene flysch formation overlaid carbonates. Oil accumulations are sealed by Triassic evaporites whereas the seal for gas is provided by Oligocene shales which lie structurally below the evaporate sheet. The structural style comprising stacked carbonate successions with intervening evaporites is important if the carbonate reservoir rocks are to be sealed efficiently. Thin-skinned thrusting along evaporitic decollements resulting in stacked carbonate sequences has clearly been demonstrated on seismic profiles and in well data. During mid-Tertiary compression the Ionian zone was sub-divided by internal thrusting into at least three sub-basins which have been mapped by Albanian geologists. Triassic evaporites (e.g. the Dumrea evaporite) are present in the hanging wall of the thrusts which separate the basins.

Most of the Albanian gas fields are located along the south-eastern margin of the Durres Basin along the Vlora-Elbasan lineament. This ancient lineament probably acted as a wrench fault during Tertiary thrusting creating particularly favourable trap structures and causing brecciation of the carbonate reservoir rocks. Formation of the Durres Basin was controlled by synchronous activity on the Vlora-Elbasan lineament and internal thrusting in the Ionian zone. The thickest sediments in this basin accumulated in the south-east close to both the Vlora-Elbasan fault and the internal Ionian thrust. Source rocks (Late Miocene) have produced mostly gas which has accumulated in coarse-grained siliciclastic reservoir rocks with sealing and trapping achieved by internal faulting and unconformities. Tortonian shales have been identified as source rocks while Tortonian-Messinian sandstones form the reservoirs. Most of the reservoirs are sealed by Messinian evaporites but hydrocarbons are in some cases trapped by biodegraded oil forming a tar mat.

The underexplored Eocene-Mesozoic basinal and platform-slope carbonate sub-thrust traps are key plays in southern part of External Albanides. The Mesozoic platform carbonate inverted sub-thrusts and buried hills are new key plays in northern part of External Albanides. The play is partly a model-driven because of lack of 2D regional seismic data. The untapped hydrocarbon potential in Durresi Basin (off-onshore) can likely only be realized through the acquisition of 3D seismic data. No commercial oil or gas accumulations have yet been discovered in the Oligocene-Miocene turbidites in the Apulian-Pindos foreland basin which overlies the rocks of the Ionian and Kruja-Gavrovo zones, although their sedimentary thickness is between 2 and 6.5 km.

Patos Marinza, an oil field discovered in 1928, is the biggest oil producing field in Albania and the biggest onshore oil field in Europe (**Figure 6**). The Patos Marinza oil field is located 10 km east of the city of Fier in south central Albania. Estimates of the original oil in place volumes range from 2 Bbbl to 7.5 Bbbl. Patos Marinza has only heavy oil and is in production since the 1930s. In the fourth quarter of 2013 it was producing 19303 bopd. Enhanced oil recovery technologies (polymer flooding and thermal methods) are extensively applied at this field.

OIL AND GAS POTENTIAL

Based on the geological studies carried out by Albpetrol (Albanian state company) and those performed in the recent years by foreign companies, it appears that Albania, in spite of the existing oil and gas fields, still has good potential and is a promising area for further exploration both onshore and offshore. Potential discoveries could be found under the existing oil discoveries in the deeper levels.

The probable structures, linked to Triassic salt diapirism must be taken into consideration for further exploration in the onshore areas, close to the region where salt diapirism is present. Onshore, thrusting westwards especially in the External Albanides is associated with the masking of the separate anticline structures or anticline chains which have potential for new oil and gas discoveries. In the cases when thrusting westwards is associated with the back thrust tectonic faults, synclines of triangular type are

formed which are not easily identified but generally hide potential trapping structures for oil and gas accumulations.

Oil potential offshore is related to the possible Ionian carbonate structures and morphological highs of Apulian platform. In the appropriate conditions offshore there are possibilities for new potential oil accumulations both in the clastic section as it was the case in A4-1X well and in the platform carbonate reservoirs. Gas potential is related to the Miocene-Pliocene folded structures as identified from the old seismic and confirmed by recent 3D seismic.

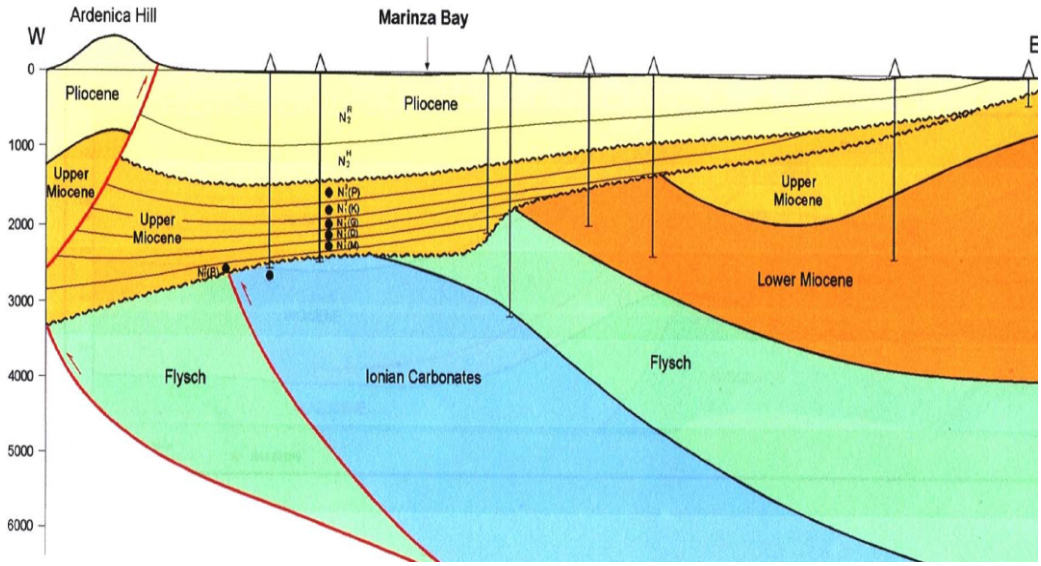

Figure 6 Patos Marinza oil field (NANR, 2009)

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EUROPEAN REGION

HOW TO RECEIVE THE AAPG-ER NEWSLETTER

AAPG members are automatically associated with the Region that corresponds with their mailing address. For example, Rio de Janeiro mailing address will be assigned for purposes of AAPG mailings, etc. with the Latin American Region. To change this designation, a member need only contact AAPG Headquarters by email and request there the Region assignment on their membership record be changed.

Requests for this change are directed to Linda Burris at lburris@aapg.org.

IFP School Win the Largest Ever AAPG IBA Semi-final

by Dave Cook

Co-Chair AAPG IBA Committee

IFP School, Rueil Malmaison, France, has won the European semi-final of the AAPG Imperial Barrel Award (IBA) competition and will go forward to represent the European Region in the final before the Annual Convention in Houston on 4th and 5th April. Competition was very strong again this year and IFP were closely followed by the University of Manchester, UK, in 2nd place and the University of Aberdeen, UK, in 3rd place.

The European Region semi-final was the largest Section or Region competition ever held in the seven year history of the AAPG IBA, with 26 teams from 14 countries taking part. Teams from Croatia, Ireland, Italy and Poland were new to the competition this year. Globally, 126 teams are participating in the 2014 programme which will have involved nearly 1000 students, with many universities holding internal competitions before selecting teams to take part.

The teams assembled at the Dorint Hotel Don Giovanni in Prague on the 6th and 7th March. The previous hotel that we had used was sold and closed three weeks before the competition was due to start, however our agents did an excellent job in managing to secure accommodation in a much better quality hotel.

The 26 teams were divided into two groups of 13 teams in order to give their exploration presentations to two panels of 5 judges. The top two teams were selected from each group and they presented again in front of the 10 judges to determine the final positions. Students from the other teams were able to attend the final session to view the presentations of the top teams.

After the awards ceremony all participants were taken by coach to a restaurant for the gala dinner and were entertained with Czech folk music and dancing. The evening was very lively and some of our group were encouraged to take part. After the gala dinner many of the students went to the city centre to enjoy the delights of Prague and didn't return until the early (or not so early) hours of the morning.

The judges were senior geoscientists from many of our major sponsors: BG Group, BP, CGG, ExxonMobil, Maersk Oil, Nexen, OMV, Shell, Solo and Total. Other companies sponsoring the European Region competition were: Baker Hughes, eni, MOL, Sterling Resources, Statoil and TGS. Our thanks go to the judges for their most effective assessment of the technical evaluations and exploration recommendations of the 26 teams. We also thank our sponsors, without whose support AAPG would not be able to run this educational programme for postgraduate geoscientists. Not only does this programme train students in petroleum geology but it also provides a window into our industry.

The winning team from IFP, with European President Keith Gerdes and Past-President Vlasta Dvorakova

Celebrations at the Gala Dinner

Exciting Academia-industry collaborations in the Europe Region

The Sir Charles Lyell Centre and the UK Centre for Doctoral Training

The following is abbreviated from an AAPG Explorer article by **Sarah Haviland** and a recent feature article in the PESGB Newsletter.

There are two exciting collaborations in the Europe Region; the Lyell Centre and the UK Centre for Doctoral training.

The Sir Charles Lyell Centre

The Lyell Centre, representing a 27 million dollar investment, is expected to open in November 2015. The centre is the result of a partnership between Heriot-Watt University and the British Geological Survey (BGS) and aims to deliver a holistic programme of research, looking into areas as diverse as environmental monitoring, offshore decommissioning technologies and geohazards assessment.

' The new centre represents a perfect marriage between earth and marine science, between pure and applied geosciences and between survey and academia. The result will be a new, integrated approach to both pure and applied earth and marine science in the United Kingdom' John Underhill, Chair of Exploration Geoscience at Heriot-Watt University.

Follow this link to view the full article by Sarah Haviland in the AAPG Explorer magazine.

UK Centre for Doctoral training

NERC (the UKs' Natural Environment Research Council) recently created a competitive tender process to allocate a substantial Doctoral Training Partnership (DTP) for Oil and Gas, containing 10 PhDs per year for 3 years. A numbers of bids were presented in late 2013, however the bid led by Heriot-Watt University and Professor of Exploration Geoscience John Underhill, was successful, receiving full funding under the scheme.

Heriot-Watt with their Core and Associate partners have pledged to match the NERC commitment to varying degrees, supporting a large number of PhD students researching four themes:

Effective production of unconventional hydrocarbons

1. Extending the life of mature basins
2. Exploitation in challenging environments
3. Environmental impact and regulation

The steering committee will be chaired by AAPG Europe Region President, Keith Gerdes, and will be charged with ensuring that research undertaken contributes to the four themes. Also, as part of the initiative, a training academy for students is planned, providing 20 weeks of high quality modules delivered by academic, government and industry experts. The academy plans to hold an annual showcase of PhD research work for oil industry sponsors.

The Core partners are: Heriot-Watt, Imperial College, Aberdeen, Durham, Manchester, Oxford, BGS

The Associate partners are: Birmingham, Cardiff, Dundee, Exeter, Glasgow, Keele, Newcastle, Nottingham, Royal Holloway, Southampton, Strathclyde, with the National Oceanographic Centre and the BGS.

ER Young Professionals Activities and Updates

Samuel McLay
YP Lead European Region

The Young Professionals in the Europe region continue to be active in 2014. A number of chapters have already help events this year, with many other exciting activities planned for the months ahead. Here is a quick look at what is coming up:

Aberdeen Chapter (President: Samual Mclay)

- Geo-cinema night – Screening of 'Switch'
- Careers night at Aberdeen University
- Day fieldtrip to Stonehaven and St Cyrus

London Chapter (President: Alex Orbital)

- Careers talks at Universities (Manchester and Southampton)
- Day fieldtrip in the local area
- Annual rugby tournament

Hague Chapter: President: Erik Sens)

- Fieldtrip to northern Belgium.

Hopefully these events will rival those undertaken by the YPs last year. Here is a reminder of what they have been up to recently…

Top left: Aberdeen YPs on a fieldtrip at Burghead Top Right: London YPs networking at Petex Bottom left: Hague YPs on a geological walk in Amsterdam and Bottom Right: Aberdeen YP and SC representatives introducing an evening of technical presentations and networking opportunities

PES GB Young Professionals

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS 1917 AAPG

Aberdeen AAPG Young Professionals

Coming soon to a cinema near you...

The PESGB and AAPG Young Professionals Present:

SWITCH

Venue: Aberdeen. Belmont Picture House

Date: 26/03/2014

Time: 18:00 (for an 18:30 showing)

Film: Switch – an agenda free documentary on the future of the energy industry

Cost: Free!

FINGER FOOD BUFFET AND DRINKS (from 6pm)

MÆRSK | TALISMAN SINOPEC ENERGY UK | Chevron | centrica energy | Statoil

AAPG Europe European Regional CONFERENCE & EXHIBITION

WEB: europe.aapg.org/2344

PRINCESA SOFIA HOTEL, BARCELONA 13-15 MAY 2014

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14TH - 17TH SEPTEMBER 2014
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Mark your calendars and watch out for registration - opening spring 2014

For the first time the AAPG ICE will incorporate with the annual APPEX REGIONAL event, having an exploration themed conference and exhibition area, specifically dedicated to the E&P sector.

ICE brings together over 2,000 of the best professional geoscientists from around the world under one roof.

APPEX REGIONAL brings together upstream E&P principals, senior managers, business developers and new venture managers for an unmatched opportunity to network and do business with NOCs, Governments, financiers and global E&P deal-makers and decision-makers.

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Book a booth in the APPEX area of the exhibition and explore current and future trends in international business, new oil and gas hotspots, and discover and debate dozens of upcoming prospects from countries including: Albania, Armenia, Azerbaijan, Bosnia-Herzegovinia, Bulgaria, Croatia, Georgia, Greece, Hungary, Israel, Iran, Iraq, Kazakhstan, Kosovo, Kyrgystan, Lebanon, Macedonia, Mongolia, Montenegro, Romania, Russia, Slovakia, Slovenia, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan, plus some Mediterranean Countries (Cyprus, Italy, Algeria, Tunisia, Libya, Egypt, Jordan).

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APPEX Regional 2014 Preliminary Technical Programme

Thursday 14th September

Welcome & Opening Remarks

09:00-09:10 APPEX Conference Chairman's Welcome, *Mike Lakin*
09:10-09:15 AAPG European President's Welcome, *Keith Gerdes*
09:15-09:20 AAPG President's Comments, *Lee Krystinik*
09:25-09:30 Welcome from Ministry of Energy and Natural Resources, Turkey

SESSION 1: Regional Forum Keynote Addresses

Chairman - Mike Lakin

09:30-09:50 Turkey's crossroads for opportunity.
09:50-10:20 Offshore opportunities in Turkey
10:20-10:30 Growth and development around the Caspian and Black Sea.

10:30 COFFEE BREAK

SESSION 2: Central and Eastern Europe: Licensing and Exploration

11:00-11:20 Licensing rounds for new acreage acquisition in Eastern Europe
11:20-11:40 Thrace Basin potential
11:40-12:00 Exploration opportunites of the Tethys

Prospect Forum

12:00-12:10 Prospect Forum - European Opportunities
12:11-12:21 Prospect Forum - Opportunities in Italy
12:22-12:32 Prospect Forum - Exploration deal-making trends in Eastern/South-Eastern Europe
12:33-12:43 Prospect Forum - Greece licencing rounds

12:45 NETWORKING LUNCH

SESSION 3: Black Sea

14:00-14:20 Deepwater play types of the Blacksea
14:20-14:40 New plays and opportunities unlocked
14:40-15:00 Regional geology

Prospect Forum

15:00-15:10 Prospect Forum
15:11-15:21 Prospect Forum - Opportunity in the Arabian Sea
15:22-15:32 Prospect Forum - Some farm-in opportunities in Southeast Turkey
15:33-15:43 Prospect Forum - Onshore hydrocarpon potential in the Southern Thrace Basin

15:45 COFFEE BREAK

SESSION 4: Unlocking New Plays and Regional Frontiers

16:00-16:20 Developments in Northern Iraq
16:20-16:40 Offshore NW Tunisia: An underexplored frontier play in a proven basin
16:40-17:00 Activities in Libya

Prospect Forum

17:00-17:10 Prospect Forum - New plays in the Eastern Mediterranean
17:11-17:21 Prospect Forum - Opportunities in Egypt

17:35 CLOSE OF DAY ONE

Friday 15th September

KEYNOTE ADDRESS: Arctic plays in the Barents Sea

SESSION 1: Former Soviet Union

09:30-09:50 Georgia's hydrocarbon potential and historical perceptions unlocked
09:50-10:10 Upstream developments in FSU

10.45 COFFEE BREAK

SESSION 2: Development of the Caspian Sea Region

11:00-11:20 Opportunities around the Caspian
11:20-11:40 The key to unlocking Europe's Southern Gas Corridor
11:40-12:00 Upstream developments in Azerbaijan, Iraq, and Turkmenistan

Prospect Forum

12.45 NETWORKING LUNCH

SESSION 3: Unconventionals

14:00-14:20 Doing business in shale/tight gas in Poland
14:20-14:40 Unconventionals potential in Europe
14:40-15:00 Exploring for unconventional gas: promises and challenges

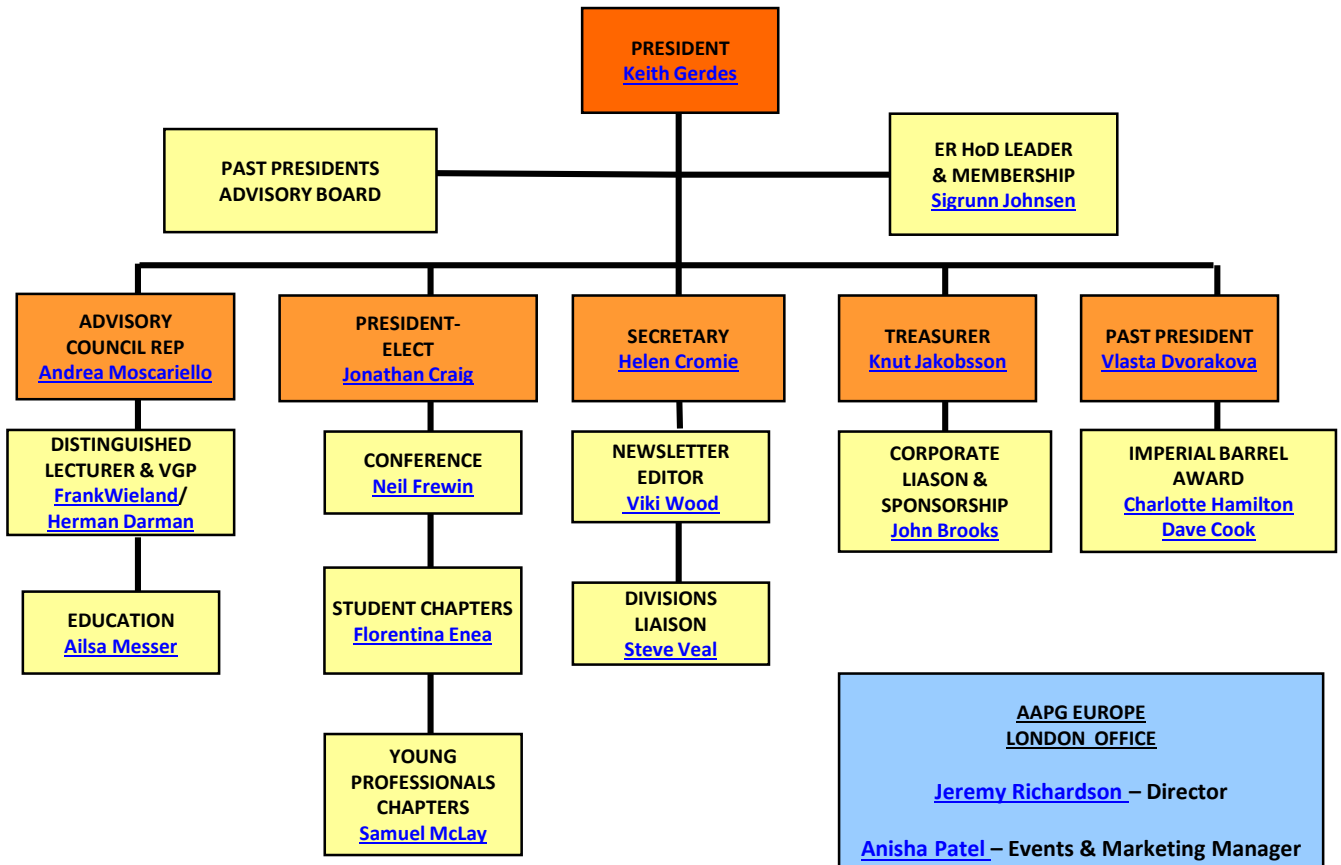
Prospect Forum

15.35 COFFEE BREAK

SESSION 4: Offshore in Eastern Europe and the East Meditteranean

15:50-16:10 Offshore oil and gas exploration in Croatia and Montenegro
16:10-16:30 New exploration potential in the Adriatic Sea and Sicily Channel
16:50-17:10 Challenges to opening the East Mediterranean frontier

17.10 CHAIRMAN'S CLOSING REMARKS & CLOSE OF CONFERENCE



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