OMCDAILY | OMC 2015 | QUOTIDIANO ENERGIA

12th Offshore Mediterranean Conference Ravenna, Italy - 26 March - Day 2

"It's time to define a strategy for supply security"

The 2015 OMC gets underway. Tannoia (Assomineraria-Eni): the Mediterranean area? "A key player in the European and global energy scenario". Vicari (Ministry of Economic Development): "Italy has the best practices in terms of security"

"We must define a middle- and long-term strategy that would ensure the supply security for Europe, particularly in terms of gas". Giuseppe Tannoia, president of Assomineraria and executive vice president of Eni Europe Region, affirmed in clearly when opening on the first day of the 2015 OMC 2015 the session entitled "Focus on Change: Planning the Next 20 Years. Diversifying Choices, Increasing Opportunities", who outlined the historical moment that the energy sector is going through, the requirements that Europe needs to meet and the opportunities that the oil&gas industry of the Mediterranean basin may offer.

In the opinion of Tannoia, chairman of the session, considering the present economic situation, the OMC takes place in a "very interesting and stimulating moment for the energy sector." In particular, "between the second half of 2014 and the first weeks of 2015, the principles changed: the global oil demand diminished; the oil price decreased; the production in the United States continued to grow constantly; the geopolitical uncertainties in Eastern Europe, North Africa and the Middle East contributed to create the issues related to the energy supply".

As a result, despite "a slight recovery of the oil demand thanks to the resumption of economic growth of both the mature and the emerging economies", it is expected that in the short-term "the market will remain weak, due to the persistence of the excessive offer and a growing stocks level in the United States". What in turn is the long-term outlook? "We believe that it is reasonable to suppose that the oil prices will grow, also without the Opec's intervention", explained Tannoia.

During the debate, Tannoia underlined that the exploitation of EU domestic hydrocarbon resources is the crucial lever for meeting the increasing demand of the continent:

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Focus

Simona Vicari (Ministry of Economic Development, Italy), Giuseppe Tannoia (Assomineraria-Eni), Sherif Sousa (Ministry of Petroleum and Mineral Resources, Egypt), Innocenzo Titone (OMC 2015), Jadalla Hamed Jadalla (NOC)

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"Europe is a net importer. The internal production accounts for only 50%, and the rest needs to be imported", he said. In this respect, the Mediterranean area may play a considerable role, and especially Italy, which according to the Eni vice president, is one of the countries with the highest potential of unexploited hydrocarbon resources. Therefore, Tannoia concluded that all the elements to make the Mediterranean area "a key player in the entire European and global energy scenario" are in place.

The main subjects of 2015 OMC edition include the analysis of a European development plan based on domestic hydrocarbon resources, energy saving and renewable sources, whilst respecting common and high quality standards and the shared regulatory framework. The aim is to turn Europe, along the South-North and East-West axes, an energy hub and a corridor ready to catch the opportunity to increment the supply security and diminish the costs of dependence on foreign countries. And precisely the event of Ravenna - as described by the president of the 2015 OMC, Innocenzo Titone - wants to be a scene for an exchange of ideas regarding the global energy issues with special attention to the countries of the Mediterranean and to Europe."

As observed during the plenary session, one of the most important aspects of the oil&gas industry is that of security. In the course of discussion, first undersecretary at the Ministry of Economic Development, Simona Vicari, relaunched the "Ravenna model", which the city mayor, Fabrizio Matteucci, and president of the Ravenna Chamber of Commerce, Natalino Gigante, described in the morning.

"This city is the proof that industry, tourism and culture can coexist", a message that the Ministry of Economic Development and the Italian Government "are attempting to promote and explain", Vicari said.

The undersecretary highlighted the reference regulatory framework for the offshore upstream activities in Italy: very soon will be implemented the European directive which regulates the offshore operations, with the introduction of "stricter rules than EU requires"; the ratification of the offshore protocol associated with the Barcelona Convention; the "Sblocca Italia" decree that approximates "the national regulations on permit granting to those of other European producing countries"; and the guidelines on the monitoring of hydrocarbon-related activities.

Vicari pointed out that all this allows Italy to be the "best practice in terms of security".

Finally, the undersecretary also touched on the bill related to the environmental crimes that "must be changed" as far as the "airgun" technology is concerned, which "is not a crime in any country in the world".

In terms of the regulations, also Edison CEO Bruno Lescoeur took the floor. He said that besides the

Bruno Lescoeur (Edison), Hamed Jadalla (NOC), Aaron Gatt Floridia (Schlumberger)

The Conference Hall

Giuseppe Tannoia (Assomineraria-Eni)

"Sblocca Italia" decree "more simplifications are necessary". In the opinion of Lescoeur, "our activities are not incentivized in Italy" and, for instance, "we were subjected to the Robin Tax until January."

As regards a more international level, Lescoeur underlined how important countries such as Egypt or Algeria "are turning from exporters to consumers to sustain their growth. Thus also the approach of the oil companies is changing, attempting to become strategic partners".

Sherif Sousa, first undersecretary at the Ministry of Petroleum and Mineral Resources of Egypt, described the direction of such a change as follows: "Egypt has been going through a crucial transition" and in this respect "also additional energy resources are necessary". The Government in turn "has put forward a strategy based on security and sustainability," which provides for, among 23 indicated measures, the increase in the energy offer and oil&gas activities.

Another country at the center of attention, above all in the recent months, has been Libya. According to Hamed Jadalla, NOC board member for Planning and Industries, since 2011 the Arab country "has been going through a period of challenges towards democracy", but it is believed that "peace and justice will prevail". Currently, "we are restoring the damaged fields" and the country's hydrocarbon resources, "also the unconventional ones", may be "exploited further in cooperation with our international partner", Jadalla concluded.

Aaron Gatt Floridia, President of Reservoir Characterization Group Schlumberger, showed in a series of presentations how the oil price drop does not translate into a drastic reduction in investments, although they gradually become less affordable. In view of this fact, according to Floridia, "it is necessary to reduce the cost of E&P operations", improve the efficiency and "reduce the time of bringing the technologies to the market".

Also the speech of Ahmed El Demerdash, vice president at Business Development Europe, Sub-Saharan Africa, Halliburton, centered on the increase in the sector's efficiency and the reduction in operating costs. If the oil price remains at the current level, it may stimulate the demand to the point that exploitation of new hydrocarbon resources will be profitable again.

The fields of great interest include that of Deep Water that according to El Demerdash is a "complex sector which yet consists of new resources. The high oil price in the past allowed for improvement of this development and the future will let re-elaborate these projects so that they could be adjusted to the present oil price".

ANTONIO JR RUGGIERO

Lotus S.r.l

RAVENNA
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info@lotusravenna.com
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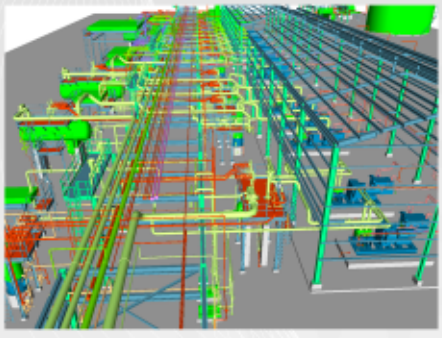

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Relaunching the Italian upstream with an overview "high technical" and "environmentally sustainable"

Three key issues: reserves evaluation, modernization of the governance system and reinforcement of safety measures following the European legislation

In the last ten years, the global upstream scenario has showed a considerable increasing of the operators' investments and the efforts of several States, among which some European Countries, in data acquisition surveys, bid rounds for exploration licenses and scientific researches on potential mining areas.

During the last five years, great part of these investments has been concentrated on the unconventional hydrocarbon production, increasing the spread between energy demand and supply.

In general, the raising strategic relevance of the exploitation of national resources aims to a stronger security energy supply, particularly in EU policies.

In this background, Italy is vulnerable since the import is more than 90% of the hydrocarbons consumptions. This dependency is estimated in nearly 3 point of GDP, even if the indigenous reserves are significant.

Furthermore, Italy, a country with 60 years long history of hydrocarbons production, experiences a depletion phase for its operating fields. In addition, the sub-optimal governance models, the adverse national macroeconomic scenarios, the uncertainty in regulation and the public acceptance problems jeopardize new E&P activities and the revamping activities of existing fields.

For this reason, accepting the UE challenge on climate and energy, Italy needs to improve the energy efficiency development and the penetration of renewable resources to restart the sustainable hydrocarbon production through three important addresses: the current reserves evaluation, the governance system modernization, and the reinforcement of safety measures following the European legislation. These actions, provided by the National Energy Strategy document (SEN), aim to limit import, promoting investments and employment and guaranteeing a further greenhouse gas (GHG) reduction.

Italy follows the SEN objectives and the EU Climate-Energy Package at 2030, looking to a relaunching of the industry with an "environmentally sustainable" and "high technical" overview. Also thanks to the know–how developed during its long history of hydrocarbons production, in fact, Italy is one of the "safest" countries in the world in term of accidents and injuries on plants.

In the Annual Report 2015, presented in the OMC 2015, it will be possible to acquire a complete and updated framework of statistical data on the upstream sector and the principal activities and initiatives promoted by this Directorate-General in 2014.

In fact, the Italian Ministry of Economic Development is now involved in many actions relative to the safety subject.

First, it is working with other Mediterranean States to promote a major coordination of the activities conducted in our sea and rise the safety standard in all countries. Moreover, is being started a complete revision of the model for the offshore safety management.

These projects, also in collaboration with national research organizations and the governmental bodies, will have positive influence on the already high levels for the safety operations in the sea, improving the total performances.

The offshore, in fact, with its biological and energy resources, has a strategic role for the country. If on one hand, Italy wants to reinforce the safety measures, also for a sustainable economy and in the light of the "blue growth" principles, on the other it is impossible to forget that the national production of gas is located mainly offshore: more precisely the 67% of national production of gas, equivalent to 4.8 MSm3 (mostly in the Adriatic Sea).

Considering that in the last years, the environmental drivers caused a revision of the marine zones open to the hydrocarbon exploration and production, reduced of the 44%, the new

activities will be conducted far from the coast and in the "deep offshore" conditions. This issue generated efforts of the operators and the Government towards an improving of the geological knowledge of subsurface, both for safety reasons and for the evaluation of potential resources of the national continental shelf. At the OMC 2015, the new special number of the Official Bulletin of Hydrocarbon and Georesources "BUIG MARE" will be presented: in it the updated situation of technical and regulatory aspects relative to all offshore upstream activities, national and international will be described

In conclusion, it is clear that to satisfy the objective at 2020 (SEN) about an increasing of the sustainable production, all these activities have to be conducted in respect to the European regulations. About this, I'm proud to inform you that the offshore safety Directive 2013/30/EU has been subjected to an accurate work analysis, conducted by a Technical Group, coordinated by this Ministry, that concluded the draft of the legislative decree, currently at the end of the transposition phase, in June 2014.

Franco Terlizzese,
general director of the Ministry of Economic Development

E&P in Italy, mixed signals in 2014

Last year the production of oil increased by 5%, that of gas decreased by 6%. Oil reserves went up 14.6%, gas reserves grew by 9.8%, but new drilling declined. The latest data from the the Directorate-General for Mineral and Natural Resources (DGRME) of the Ministry of Economic Development

Mining titles

As at December 31st, 2014, were in force on the Italian territory 117 exploration licenses (of which 95 onshore, and 22 offshore) and 201 production licenses (132 onshore and 69 offshore).

It should be noted that the activities of hydrocarbons exploration and production take place in a very small portions of the whole Italian area. In fact, onshore mining titles covered an area of about 33,8 million km2, whose only 16 km2 are interested by exploration and production activities, equal to 0.05% of the total area.

Moreover, some awarded titles are not operative. In fact, only 48 out of 95 onshore exploration licenses are active. Among the remaining 47, 8 have a suspension for elapsed time ongoing, 26 are under application for suspensions, 7 have been renounced and, finally, for 6 of them that have reached the title expiration date, a verification of effected environmental recovery is ongoing. As concerning the production licenses, 13 of them have been withdrawn and 4 passed the expiration date of the title.

As for the offshore activities, licenses interest 6 areas (Zones A, B, C, D, E, F and G).

Compared with 2013, the number of exploration licenses and exploitation concessions remained constant.

In 2014, 5 new exploration licenses and 2 new production licenses were awarded. In the same year, renouncement of 4 exploration licenses has been accepted. In addition, specific decrees were issued for a three-year exploration license extension, for the enlargement of a production license, for 8 ownership stakes transfer and for 21 exploration permits suspension/reactivation due to expiry of the limit time.

Drilling activity

In 2014 drilling activities were carried out on 12 wells, 4 onshore and 8 offshore. 8 in 12 are development wells (all offshore), while the remaining 4 (all onshore) are 3 storage wells and a monitoring one. It is underlined that in 2014, no exploration wells were drilled.

These data show how the activities of the operators are currently almost exclusively oriented to optimize the development of existing fields, rather than to the research and development of new resources.

In the course of 2014, drilling activities involved 11 drilling rigs (1 well was completed in 2014 but drilling was completed in 2013), for a total of 22,391 meters drilled. In particular, 10 of them were successful and 1 was a dry hole. At the date of December 31st, 2014 the perforation of one well was still ongoing.

In 2014, the number of new drilling declined, in line with the trend of the last decade and there was a progressive reduction in the exploration of new accumulations. In particular in the last five years, 135 new wells were completed, only 10 of which were exploration wells (7.45%). The downward trend is more significant for offshore activities: in the last 6 years no new exploration wells were drilled.

The research of new hydrocarbon fields saw its greatest period of growth in the early 90s with about a hundred new wells per year drilled, mostly for exploration purposes. From the second half of the 90s the number of new drillings has gradually decreased, and particularly in the last decade, there was a progressive decrease in the research for new accumulations.

The limited exploration activity is mainly due to the difficulty and the time length required for issuing the licenses and the necessary authorization for drilling.

No hydrocarbon discovery was made in 2014.

Production activity

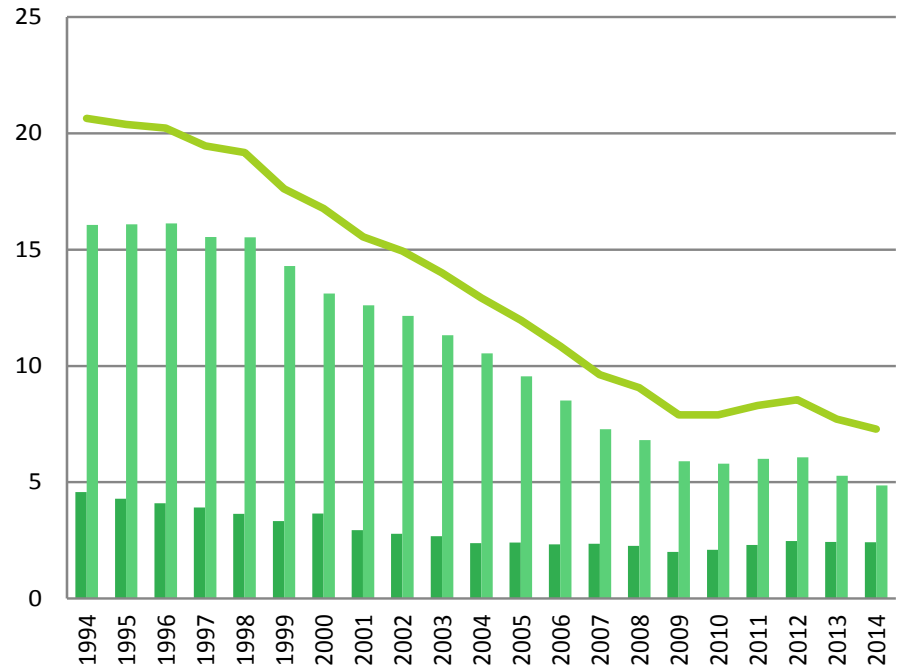
In the year 2014, the production of hydrocarbons recorded a slight increase for the crude oil (+5%), compared to the previous year value, and a decrease for natural gas (-6%).

The last decade was characterized, in the first phase, by a steady decline of production, with minimum values recorded in 2009. For what concern oil, a more recent period of growth can be seen, that began in 2010 and was confirmed by data production of 2014. For natural gas, after an initial improvement started in 2011 and continued in 2012, production in 2013 and 2014 restarted to decrease again recording the historical minimum of 7.28 billion of Sm3.

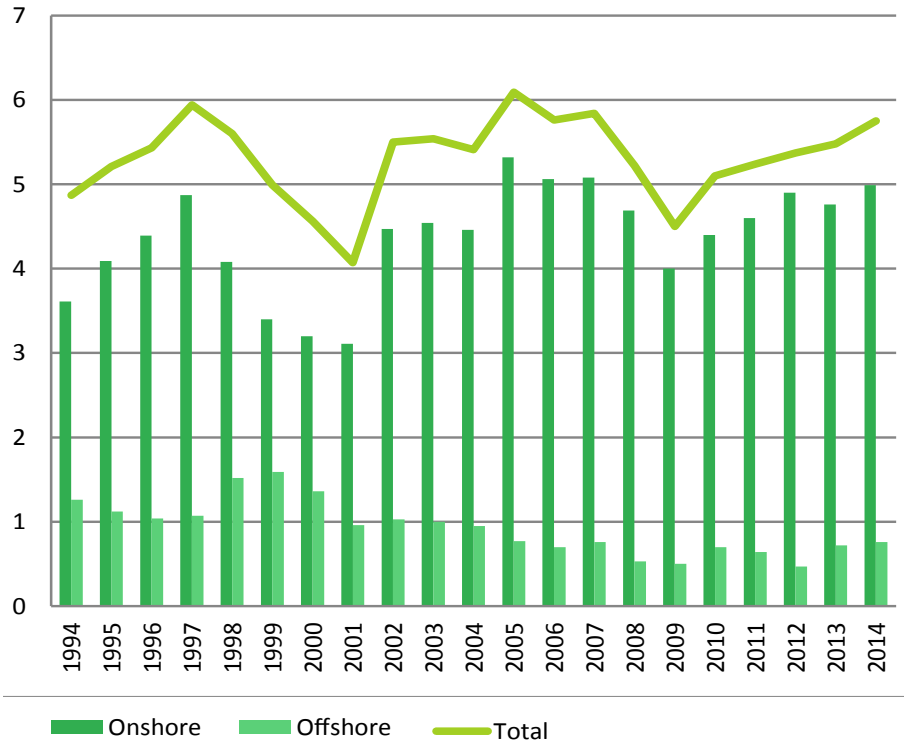
As for natural gas, 2014 was characterised by a production of 7.2 billion of Sm3, with an increase, as already mentioned, of 6% compared to 2013 (7.71 billion of Sm3). The higher part of production derives from offshore licenses (4.86 billion of Sm3, representing 67% of national production - NP), above all from Marine Area B and A (respectively 10% and 20% of the NP). Onshore, the higher part of production (1.47 billion of Sm3) derives from the Basilicata Region (16% of the NP).

As for the oil, in 2014 there was a production of 5.75 million tons, with an increase of 2% compared to 2013 (5.48 million tonnes), as already mentioned. Most of the production comes from on-

Production of gas (billion cm)-Time series years 1994-2014



Oil production (million tons) – Time series years 1994-2014



shore licenses (4.99 million tons equal to 87% of national production - NP), located especially in Basilicata (69% NP) and Sicily (16% NP).

Production plants

In the 201 production licenses there are 894 productive wells, of which 695 are gas wells, 199 oil wells, 532 are onshore and 362 offshore. Produced hydrocarbons are sent to 78 (gas) and 14 (oil) treatment and collection plant.

In the Italian offshore, 133 offshore plants are installed and, according to their typology and utilisation, they are divide into: 106 production platforms with 83 producing wells; 11 subsea wellheads, of which 3 producing wells; 8 platforms for supporting production (compression or connection); 8 not operating systems (discoveries effected in exploration licenses currently waiting for the production license).

Part of the offshore crude oil production is transported by pipelines to the 3 onshore oil treatment plants. The remaining offshore oil production is temporarily stored by means of a FSO/FPSO unit (floating, production, storage and offloading).

Reserves

The reserves data at December 31st, 2014 show an increase of about 9.8% for gas and approximately 14.6% for oil, with respect to the figure at 2013, December 31st, after subtracting the production obtained in 2014.

With regard to the location of proved reserves, 59% of the total national gas is located offshore, in particular 40% in zone A, while oil reserves are located for nearly 90% onshore, and for the most part in Basilicata.

In addition to reserves already discovered, for which it is possible to have reliable estimations, in the Italian underground there are further hydrocarbon resources to be discovered that, unfortunately, it is impossible to quantify because of the absence of exploration activities. In fact, the quite total absence in the last 5 years of new research activities, besides threatening the substitution of consumed reserves, does not allow to improve knowledge about the hydrocarbon potential of our country, deemed still significant and able to grant, in presence of a new start of research and development activities blocked in the last years, the accomplishment of the SEN objectives.

Royalties from hydrocarbons

The total amounts of royalties paid during 2014 were about 402 million euro, of which: State 70,7 million euro, Regions 182,4 million euro, Municipalities 29,2 million euro, Fund for Fuel Price Reduction 85,6 million euro, Safety and Environment quota 34 million euro.

As for the upstream operators that paid royalties, Eni paid 258,8 million euro, Shell Italia E&P 106,7 million euro, Ionica Gas 19,4 million euro, Edison 10,2 million euro, Adriatica Idrocarburi 2,9 million euro and Eni Mediterranea Idrocarburi 2,2 million euro. Gas Plus Italiana, Padana Energia and Medoilgas Italia paid less than 1 million euro.

• Today Sala Verde •

Technical sessions

Offshore regulations:
a warm up for tomorrow special session

Towards the transposition of directive 2013/30/EU in Italy

On 28 June 2013 Directive 2013/30/EU was published in the EU Official Journal. The aim of the Directive is to establish minimum requirements for preventing major accidents in offshore hydrocarbon exploration and exploitation and limiting the consequences of such accidents thus increasing the protection of the marine environment and coastal economies. "Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with Directive by 19 July 2015" (art. 41).

The Directorate-General for Mineral and Energy Resources (DGRME) of the Italian Ministry of Economic Development is playing a key role in the steps towards the transposition of the Directive in Italy. The DGRME coordinated the Technical Working Group (TWG) for the transposition in close cooperation with the Ministry of Environment. The TWG allowed broad participation of all the relevant national administrations and periodical consultation with the stakeholders.

In June 2014, the TWG produced a draft Legislative Decree, generally agreed by the administrations and the stakeholders, which will be the basis for the future implementation measure. In addition, DGRME assisted the Commission in drafting Implementing Act No.1112/2014 taking part both in EUAOG and the related Advisory Committee meetings.

The Implementing Act (IA) does not need transposition, the Directive specifically requires the IA for ensuring uniformity among Member States in transparency and information sharing on major hazards among stakeholders. The IA is considered strategic for monitoring the effectiveness of measures to prevent major accidents and to "strengthen public confidence in the authority and integrity" of the offshore operations.

The paper presents the path for the transposition of the Directive, a summary of the work of the TWG and the main points of the IA related to the Directive.

M. Strada, R. Cianella, A. Cofini, L. Di Donatantonio
Ministry of Economic Development

• Today •

Special session

• 9,00 • Room A •

Enhanced oil recovery: moving faster from lab to field

A special session today: technical papers and panel presentations will describe field cases, development and characterization, capability and implementation

Today Enhanced oil recovery (EOR) accounts for about 4% of global oil production, but with hydrocarbon reservoirs around the world steadily maturing, the oil&gas industry is turning more and more to EOR to support the global energy demand and by 2030 estimates suggest that EOR will account for 10% of world production.

EOR is therefore one of the main themes of OMC 2015. After yesterday's two invited lectures covering fundamentals of multi-phase flow in EOR, the special session which takes place today (Room A from 9.00 to 10.40) includes panel and technical sessions dedicated to EOR with focus on field applications and faster implementation of EOR techniques. Technical papers will be presenting EOR field cases, development and characterization, while panel presentations will describe the EOR field cases, capability development and implementation.

The panellists, moderated by Alexey Andrianov, EOR expert Eni Upstream, will present EOR field cases from their company and share their view on faster moving EOR from lab to field.

In particular, Diederik Boersma, manager IOR/EOR Shell Global Solutions, will present on "IOR/EOR a changing landscape", Torsten Clemens, chief scientist for reservoir engineering OMV E&P, on "Polymer flooding – from micro- to field scale" and Marco Rotondi, manager IOR/EOR Eni Upstream, on "Building an enhanced oil recovery culture".

The debate continues from 11.00 to 12.40, also in Room A, in the technical session "EOR Technologies", chaired by Fernando Luis Morales Urosa, Schlumberger, and Marco Rotondi. In this session speaker are Thomas Gumpenberger, David Zabel and Torsten Clemens (Omv Exploration & Production); Corrado Sebastiano Pizzinelli, Franco Masserano, Stefano Dresda, Roberto Cimino, Elena Braccalenti and Abdel Rahman Ahmed (Eni); Abdulrahman A. AlQuraishi, Saud N. AlHussinan and Hamdan Q. AlYami (Kacst); Ruggiero Maria Pesce and Davide Moscatelli (Politecnico di Milano).

Getting more from existing resources

"Enhanced Oil Recovery" can help to extract a further 5-20% of the oil in place and in some cases up to 80%. Interview with Shell country chair Italy and Adriatic Countries, Marco Brun

We are going through times of international turmoil. How does the energy landscape - in particular in Europe and in the Mediterranean - look to you?

Let me start with the months ahead. Oil prices will of course be an important issue throughout the year. Since summer, the price of Brent crude has plunged. Higher shale production in the US, an unwillingness by OPEC to cut its own production, and an energy demand slowdown in China – these are just some of the factors shaping a complex situation.

Low prices have big implications for exporting countries like Iran, Russia and Venezuela. But also for shale-producers in the US, and even the domestic budgets of producers in the Gulf states. In consuming nations, low oil prices are an economic boon stimulating growth and demand.

What will happen in 2015? I can't predict the future, but oil demand is clearly linked to economic growth. Compared to last year, the IMF expects the global economy to grow. So, global oil demand is expected to grow as well. But seeing today's prices, supply will probably not keep pace with this growth. It may even decline, as prices are close to costs, according to consultants like Wood Mackenzie. As a result, energy companies could shut down some of their existing production.

If the brighter economic outlook becomes reality, the market could tighten, and this would support higher prices. But two questions remain. Firstly: How far and how long will prices fall? Secondly: How quickly can prices recover? A rapid recovery could occur if projects are postponed or even cancelled. This would lead to less new supply – not so much now, but in two or three years. Combined with economic growth, the market could tighten quickly in this scenario.

But what if the largest supply growth engine, US shale oil, proves to be resilient in the face of falling prices and the markets remain well-supplied? In that case, with moderate economic growth, prices could stay low for longer.

Either way: The market will remain volatile in 2015, if only because for now, OPEC shows no sign of wanting to resume its role as swing supplier. But for the longer term, I see no change to fundamental drivers of oil markets such as rising demand and the need for new supplies. Our New Lens Scenarios are one of the tools Shell uses to look at the future. In the two scenarios, 'Mountains' and 'Oceans', oil demand will continue to grow for at least two decades.

Production from oil fields typically declines at a rate of at least 5% a year. This means that the need for new supply could be as high as five million barrels a day, year after year until at least 2030.

This amount of supply cannot be delivered by OPEC or shale oil producers in the US alone. It will need to come from new and challenging areas, and has to be supported by an oil price that justifies huge investments.

The oil price will remain an important issue throughout the year. While a boon to consumers, these are tough times for some producers. But at Shell, we're determined to avoid a start-stop approach to investment. Shell will remain a large investor in 2015, with a strong focus on costs. And we will certainly continue to invest in R&D. R&D is our sector's life line at a time of energy transition. In fact, today and in the future, people must develop the energy resources needed to power progress while preserving the health of the planet. For Shell that means: More energy. Cleaner energy. A smarter, more efficient use of energy.

Shell, as the entire oil industry, was heavily affected by the weakening of oil prices. Last January, Shell's CEO Ben van Beurden announced a reduction of capital investment for 2015-17 of over $15 billion. How this reduction will affect Shell activities?

The premise of this question is incorrect, we did not announce capex cuts of $15bn over the next three years. What we said was that organic capex will stay largely flat, perhaps a bit lower, in 2015 than it was in 2014 (at

$35bn). The $15bn over three years refers to investment that we could have made but will now not, and this will manifest itself in investment decisions on around 40 projects globally either being deferred beyond the three-year period or stopped. At this stage there are no details of what those projects are.

Shell Italia E&P strategy to grow and maximise hydrocarbons potential in Italy remains unchanged. Italy is an important country for Shell and the oil&gas businesses present interesting growth opportunities. Increased indigenous hydrocarbon production can significantly, reduce dependence on imports and cutting energy bills, at the same time stimulating skills, know-how and employment. The development of this potential can play a strategic role for Italy and energy independence becomes critical now more than ever. Renzi's government is rightly stepping up efforts in this direction promoting brave and concrete reforms. Embracing this strategic direction and sustaining the Government's efforts in making Italy a competitive country should be a shared commitment.

Could you give us a summary of the session you will be covering at the OMC conference and of the events taking place at your stand?

Shell is chairing two sessions on 'Energy efficiency' and 'Technical and Non Technical Risk Assessment'. In addition we are contributing in the 'Sustainability' session with a presentation hosted by N. Prentice and D. Fitzgerald - Oxford University Press: "Social performance, choice and opportunity in the community: a Shell sponsored library project in Basilicata'. This paper reviews the educational and social impact of a grassroots extensive reading project (Read ON) in the Basilicata area. Now in its third year, this class library initiative is established in a number of schools, primary through secondary, throughout the region with over 4,500 children and 150 teachers involved in the programme. The programme has positive effect on student learning and motivation, but also encouraged teachers to adopt the innovative approaches to teaching promoted by the initiative.

Our stand at OMC 2015 exhibition is focusing on innovation, which remains the lifeblood of Shell's growth. Pioneer spirit, technology and innovation are key factors to develop energy resources safely and responsibly and to meet the growing energy demand. The world must produce enough energy in the decades ahead to power its economies and sustain people's lives. Human ingenuity and innovation are the keys to achieving this. Shell has always been a company of firsts: from sailing the first oil tanker through the Suez Canal in 1892, to designing and building the first floating liquefied natural gas facility today. We spend over $1 billion a year on research and development, more than any other international oil company. Our technical and engineering community comprises more than 45,000 people, many working in our 16 research centres in Asia, Europe and North America. We hold more than 15,000 active patents, making us one of the world's most inventive energy companies. We also work with other firms, research institutes and universities to develop imaginative but realistic solutions to the challenges the world faces. Among its advanced technologies Shell includes the GTL, the patented technology which enables to turn natural gas into clean fuels and lubricants, and the Floating Liquefied Natural Gas (FLNG), which we'll present at our stand.

OMC 2015 host today a panel on "Enhanced Oil Recovery" (EOR). What is Shell doing in this field?

Getting more from existing resources is one crucial way to help meet energy demand. On average, only around 35% of a field's oil is recovered. The rest remains trapped in the rock. Estimates suggest that EOR accounts for 4% of global oil production; boosting oil recovery could unlock around 300 billion barrels of oil, according to the International Energy Agency. This is about 10 years of production at today's level; and yet the full potential is arguably greater.

A range of proven technologies help us boost the amount we produce, each of which is suitable for application at different reservoir depths and for oil with different properties. These include injecting steam into reservoirs to reduce the oil's viscosity and ease its flow, injecting gas or water to push oil out or to thin it; or injecting chemicals that free tapped oil. EOR can help to extract a further 5-20% of the oil in place. Depending on the reservoir, total recovery levels up to 50-70% are possible; in some cases we can increase oil recovery to up to 80%.

We have more than 10 EOR projects in operation or at the development stage, and more than 25 filed trails or studies under way.

LUCA TABASSO

RINA: new rules for offshore platforms

The update will be published in May and cover classification, certification and verification. The aim is to facilitate life extension, reduce downtime and give owners more control

Many of the world's fleet of offshore fixed oil and gas platforms are nearing the end of their designed life. At the same time the regulatory framework for offshore platforms is changing. With low energy prices this creates pressures on platform operators and designers of new units. Italy's RINA Services has responded to these challenges by completely updating its rules for the Classification of Fixed Offshore Platforms to provide a comprehensive guide to classification, certification and verification.

The new rules facilitate life extension, reduce downtime caused by inspection and maintenance and give owners more choices and control over their design, operation and maintenance strategies.

The new rules will be published in May 2015 and will cover classification, certification and verification of fixed offshore platforms. The rules and guidance provide a cradle-to-grave framework for the structural and process safety of the entire platform. They build on RINA's experience with offshore platforms in the Mediterranean, Red Sea, Indian and Atlantic oceans and the Caspian Sea.

Original design, fabrication, installation, structural assessment, topside process certification, life extension assessment and decommissioning are all covered.

Platform designers and operators can choose from and mix three approaches: classification, certification and verification. Classification allows the platform to be built and maintained against a set of prescriptive rules set by RINA. Certification measures the platform structure and topside equipment and process against set international or local standards. Verification is the new risk-based Safety Case approach which extends the current UK regulatory system to the entire EU from 2015 and which is in increasing use globally.

Environmental protection is central to the new rules which have been developed with the aim of significantly reducing the risk of accidents and environmental damage.

Under each of the approaches RINA's rules now allow for Load and Resistance Factor Design (LRFD), a probabilistic approach to structural assessment. International standards incorporated include API RP 2A and the ISO 19900 series.

The rules make life extension simpler and more feasible. They set out clear guidelines and requirements for assessing fatigue and corrosion issues to determine what must be done to allow platforms to continue to operate beyond their design life. The life extension approach incorporates Risk-Based Inspection (RBI) and risk-based maintenance planning. RBI can provide significant economic benefits for operators by better targeting of inspection and maintenance resources and reduced downtime.

RBI and monitoring and measurement in service are included in the requirements and guidance for topside process certification or verification.

The new rules provide all parties with clear pathways and choices between all the most modern techniques and technology for the design, fabrication, installation, operation, life extension and decommissioning of offshore fixed platforms.

Andrea Bombardi,
General Manager Energy,
RINA Services

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Turboden, a Mitsubishi Heavy Industry company, with more than 300 ORC plants in the world, is a global leader in ORC technology for the generation of electric power and heat from renewable sources including **biomass**, **solar**, **geothermal energy** and **waste heat** from energy-intensive industries, engines, gas turbines and Oil & Gas processes. Turboden ORC sizes range from 200 kW to 15 MW electric.

For More Information:
Nicola Rossetti
Sales Area Manager
nicola.rossetti@turboden.it
M. +39.345.2168007

www.turboden.com

Air quality and biomonitoring

The opportunities offered by the use of organisms like mosses and lichens

An adequate monitoring of environmental matrices, aimed at evaluating the environmental sustainability of a project, is fundamental to have a precise assessment of the impacts generated by human activities, in particular industrial/oil&gas activities.

If compared to traditional techniques, biomonitoring has the advantage of providing estimates about combined effects of pollutants on living beings, has limited costs and allows the analysis of wide areas and diversified territories.

Biomonitoring of air quality is based on assessing the effects produced by air pollution on organisms and their communities. The organisms (including mosses and lichens) may be used in monitoring air quality both as bioindicators, namely organisms affected by changes in physiology/morphology/spatial distribution and as bio-accumulators, namely organisms able to survive in the presence of those pollutants they accumulate in their tissues.

The survey made in the case study presented at OMC consisted of the biomonitoring campaign, arranged over more levels, aimed at the characterization of the ante-operam status of an area, under anthropogenic pressures, where the productive activity will be located. After monitoring the air quality, thanks to the use of mobile switchboard surveys and appropriate provisional surveys about the dispersion of pollutants, an analysis of possible acute phenomena was carried out through survey campaign about the vegetative conditions of the riparian vegetation and on the presence or absence of physiopathology.

Simultaneously, a survey was carried out about sub-acute phenomena through laboratory analysis on bryophytes (mosses) to assess the bioaccumulation of the phenomena. A comparison with the accumulation levels was executed on those soils where mosses grow and on collected and analyzed leaf samples and the analysis of possible chronic phenomena was performed through the application of the lichen biodiversity index.

Biomonitoring, if made throughout time, will allow the assessment of the impacts generated by the project, allowing to highlight any air polluting phenomena, resulting from the accumulation of other productive facilities.

Cesare Di Michele,
Environmental Engineering Team Leader
Proger

A new generation of fully automated drilling rig

Drillmec presents at OMC it's AHEAD series, which focuses on HSE and efficiency

It's no secret that drilling activity for oil and gas E&P in the past decade has taken on new challenges which required innovative solutions able to combine high HSE standards, enhanced performance and competitive costs in all operating conditions.

The latest generation of Drillmec's drilling rigs presented at OMC 2015 is named AHEAD - Advanced Hydraulic Electrical Automated Driller and is a new concept of fully automated drilling rigs where highest HSE standards and drilling efficiency are assured with automation and a complete drilling package able to ensure a "continuous dialogue" with the bottom hole.

With the introduction of AHEAD Series, Drillmec sets a new standard for its hydraulic rigs, in order to make them competitive with the 1,500 – 2,000 hp conventional rigs, also in the offshore, particularly for platforms with limited space available and lift boat.

The new patent pending hydraulic telescopic mast, equipped with a double hydraulic piston in tandem, and the fully automated off-line system (patent pending) are other technical breakthroughs introduced.

These characteristics ensure AHEAD the capability of handling 90 ft stands of two API Range 3 drill pipes (or three API Range 2 drill pipes), maintaining fast moving and environmental friendly design.

Moreover, the AHEAD Series will be "able to communicate with the bottom hole" thanks to the direct integration of a drilling package (patent pending), named HoD Heart of Drilling, with the rig.

The HoD combines continuous circulation, flow rate monitoring system and an anti-friction device to guarantee a continuous dialogue with the bottom hole, assuring, at the same time, the optimal working condition for each sensitive rig component, like BOPs and the top drives.

The AHEAD Series and the package HoD represent technologies especially focused on challenging operating conditions as HP/HT wells, extended reach wells and in deepwater. The aim is to ensure high HSE standard and a reduction of time and project costs.

Angelo Calderoni,
Vice President Marketing & RD Drillmec

Marco Cercato,
Marketing Manager Drillmec

Ultra-deep water, a new drilling ship from Fincantieri

"Proxima" has a drilling system capable of a maximum depth of 50,000 ft

Today at OMC Technical Conference Fincantieri will introduce Proxima, a new ultra-deep water drillship capable of a maximum drilling depth of 50,000 ft in 12,000 ft of water. Differing from traditional drilling towers, its new drilling system is composed of two cylindrically shaped telescopic towers. This innovative ship configuration increases the speed of the drilling process and overall the design will result in better efficiency, improved safety, more comfort for people onboard and a higher transit speed.

The philosophy behind the design is to propose to the market solutions which allow a clear operational cost reduction and allow both field operators and drilling contractors to boost their business plan also in an environment characterized by low oil price. Those players who are aiming to get the opportunity of the future and as such are determined to differentiate their offer in order to offer win-win relationship to their clients, cannot avoid to deepen the characteristics and performances provided by a cutting edge vessel like Proxima.

Proxima offers features such as: an enhanced drilling tower lifting capacity, an higher tripping speed, 20k BOPs, the MPD capability, a larger open drill floor and deck area, an extended drilling endurance, accommodation for up to 250 people.

This new drillfloor arrangement allowed the introduction of solutions such as the two moonpools. The distance between the well centers have been doubled and two moonpools have been arranged instead of the conventional one. The main effect is to increase the speed of the vessel in transit or, at same speed, to reduce the power required.Another result is the big drillfloor, actually a real working deck, which extend from the accommodation to the aft part of the vessel. All external decks and the internal ones are connected with special elevator dedicated to the forklifts. This arrangement allows the handling of relatively small stuff with the forklifts all around the ship without the necessity to utilize the big deck cranes.

Luca Ambrosio, Offshore Business Unit Head of Special Projects Fincantieri

Gianni Scherl, Senior Designer Offshore Business Unit Fincantieri

Marko Keber, Work Package Manager Drilling Systems Fincantieri

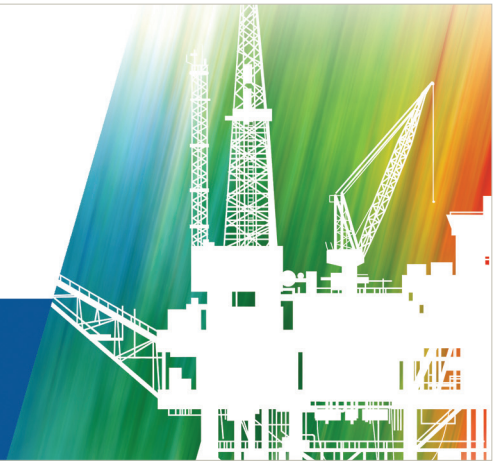
INDUSTRY AND STUDENTS
Getting to know each other

Arena - Today - Schedule of Presentations

11.00 – 11.30	EDISON
11.35 – 12.05	HALLIBURTON
12.10 – 12.40	ROSETTI MARINO
16.15 – 16,45	Schlumberger
16.50 – 17.20	TOTAL COMMITTED TO BETTER ENERGY

5 Minute speech contest

14.00 - **Azzurra Agostini**, Politecnico di Milano
14.06 - **Serena Bortot,** Università degli Studi di Ferrara
14.12 - **Konstantinos Christou,** The University of Aberdeen (UK)
14.18 - **Fabio Colantonio,** Università degli Studi "G. d'Annunzio" CH-PE
14.24 - **Matteo Compagnoni,** Università degli Studi di Milano
14.30 - **Andrea Franceschini,** Università degli Studi di Padova
14.36 - **Alessio Fumagalli,** Politecnico di Milano
14.42 - **Luca Gambirasio,** Università degli Studi di Bergamo
14.48 - **Seyedahmad Hosseini,** Politecnico di Torino
14.54 - **Gianluca Longoni,** Università degli Studi Milano-Bicocca
15.00 - **Andrea Maniscalco,** Politecnico di Milano
15.06 - **Adrià Moreno Miquel,** Università di Bologna
15.12 - **Akposibruke Oghenevwogaga,** Politecnico di Torino
15.18 - **Elisa Panza,** Università degli Studi della Basilicata
15.24 - **Concetta Ruocco,** Università degli Studi di Salerno
15.30 - **Peyman Sabbahfar,** Università di Bologna
15.36 - **Michele Starni,** Università di Bologna
15.42 - **Chukwuemeka Uzukwu,** The University of Aberdeen (UK)
15.48 - **Giulia Zanier,** Unversità degli Studi di Trieste
15.54 - **Paolo Zanini,** Politecnico di Milano
16.00 - **Claudia Zoccarato,** Università degli Studi di Padova



Thursday 26 March

09.00 - 10.40 Enhanced Oil Recovery: Field Cases and Faster Way to Implementation (ROOM A)

09.00 - 12.40 Workshop Advanced Proven Technologies Increase Productivity Quality, Safety and Security (PRESENTATION GALLERY, 1ST FLOOR)

09.00 - 10.40 Digital poster presentations (HALL 3)
- Production Optimisation
- Deep and Ultradeep

11.00 - 12.40 Digital poster presentations (HALL 3)
- Drilling

09.00 - 10.40 Technical Sessions

Offshore and Deepwater Technologies 3 (ROOM B)
- Enhanced modelling for pipeline defects assessments
- Anti flooding tool: how to reduce consequences of a wet buckle during lay
- DNV GL floatpipe: a pipeline concept for challenging sea-bed and deep water conditions
- Installation challenges for ultra - deep waters

Technical and Non Technical Risk Assessment (ROOM C)
- Results of environmental risk analysis carried out on Dunbar offshore installation
- Fit for purpose R&D programs for new drilling technologies applying a systematic and exhaustive safety/economic approach
- Integrated risk management to meet the challenges of today's Oil&Gas industry
- Simulation of accidental lng dispersion

Drilling: New Technologies 1 (ROOM D)
- Managed pressure drilling strategies enable successful drilling of the deepest HPHT exploratory well in the mediterranean sea
- Next generation gas tight connection
- Innovative heavy landing system for ultra deep offshore applications
- High-performance fluid contributes to improved drilling results in unconventional sandstone formation

Safety and Environmental Protection in Offshore Operations (SALA VERDE)
- Virtual reality of a typical ENI platform to anticipate and train for start-up, maintenance and emergency operations
- Well killing guidance system: operation and handling tested in water
- Biodiversity conservation and O&G offshore operations in Mediterranean: how to fit them within the recent conservation initiatives and new monitoring tools
- The challenge to minimise emissions from offshore power generation

11.00 - 12.40 Technical Sessions

Enhanced Oil Recovery Technologies (ROOM A)
- Influence of alkali and surfactants on near-wellbore- and reservoir viscosities of polymers for EOR applications
- Polymer injection: EOR application in North African field from lab analysis to project start-up
- Efficiency and recovery mechanisms of low salinity water flooding in sandstone and carbonate reservoirs
- Chemical EOR project for a North African Giant Field

Offshore and Deepwater 4 (ROOM B)
- In-service buckling assessment – the correct use of engineering analysis tools
- Optimising production through efficient sand risk management in deepwater production wells
- Sand management in subsea produced water separation unit - review of technologies and tests
- Successful experience of hydrate plug removal from deepwater gas injection flowline

Sustainability and Environmental (ROOM C)
- Micro-seismic monitoring of underground gas storages. The "Collalto" seismic network
- Biodegradation of hydrocarbons: clean promising depollution technology for a sustainable management of environment in Oil&Gas industry
- A novel hydrophobic material for oil-water separation through selective permeation: the study of key parameters affecting performance
- A complete method to safeguard the buried pipelines subject to landslide effect

Opportunities in Exploration (ROOM D)
- Enhance oil recovery by discovering a new potential hydrocarbon from the unconventional reservoir, in Abu Rudies/Sidri field, Gulf of Suez, Egypt
- The emry deep oil discovery, a new type of play in an otherwise mature province
- Offshore Sardinia (Italy): new perspectives in the marine zone open to hydrocarbons exploration and exploitation
- Advanced seismic techniques to enhance exploration in the mediterranean basin

Energy Efficiency (SALA VERDE)
- Surplus heat: free fuel for efficiency improvement in the Oil&Gas industry
- Improve the performance of natural gas processing plants by utilizing waste heat for process heating and power generation purposes
- Development of innovative solar-fossil hybrid plant in a remote O&G area
- Concentrating solar power applied to EOR: high temperature fluid circulation for enhancing the recovery of heavy oil

11.00 - 18.00 Youth Programme (STUDENT ARENA, HALL 2)

13.00 Working lunch - Sponsored by OMC Organizers

14.30 – 16.10 Digital poster presentations (HALL 3)
- Offshore and deep water technologies
- Gas to market

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Thursday 26 March

14.30 - 16.10 Technical Sessions

Well Construction and Management 3 (ROOM A)

- Application of multi-zone single-trip system in West Africa: optimization and cost-saving opportunities for deepwater appraisal well completions
- Sonatrach experience and approach in the optimization of dvm practices in drilling operations
- Multi stage acid fracturing on carbonate reservoir, successful experience from offshore Congo
- Use of drilling with liner technology to mitigate a catastrophic loss interval - a successful case study in the North Sea

Subsea Production (ROOM B)

- Separator efficiency model during hydrodynamic and severe slugging
- Modelling of petroleum multiphase fluids in ESPS: an intelligent approach
- Project execution of a complete subsea multiphase pump system for the draugen field in Norway
- Subsea multiphase pumping: an enabler for deepwater developments

Reservoir Monitoring and Simulations (ROOM C)

- Assessment of the potential for induced seismicity at the Cavone oilfield: analysis of structural and geophysical data, and geomechanical modeling
- Developing while appraising a tight oil reservoir from discovery to early production and full field development
- Practical alternate integrated asset models
- Alternative approach to absolute permeability estimation using NMR-derived grain size distribution

Deep and Ultradeep 1 (ROOM D)

- "Proxima" drillship: a UDW drillship with a vision of the future development of offshore Oil&Gas exploration
- High capacity installation equipment for meeting the challenges of ultra deep waters
- Modular pipeline recovery technology developments
- Taking deep-water pipelines to the x-stream

Sustainability (SALA VERDE)

- A new experience for public-awareness towards public-acceptance in E&P: 3D real reservoir representation
- Case history in scientific and pseudo-scientific mass-media communication in energy/heat production from underground (geogas storage, geothermics, hydrocarbons) in the frame of nimby sindrome enhancement in europe: the proposal of a new European Directive
- Social performance, choice and opportunity in the community: a shell sponsored library project in Basilicata
- Casa Tiberi plant: Igzero ("italian gas at km.0") with ZEM ("zero emission plant")

16.30 - 18.30 Workshop Subsea Construction Vessels (ROOM D, 1ST FLOOR)

16.30 -18.10 Technical Sessions

Drilling: New Technologies 2 (ROOM A)

- High-temperature directional drilling positive
- A novel invert emulsion system using a polyglycerol internal phasedisplacement motor
- Managed pressure drilling provided value to offshore drilling operation
- Drillmec ahead: a new generation of fully automated drilling rig forward designed to meet the highest HSE standards and drilling efficiency

Strategies for Offshore Developments (ROOM B)

- 360° integration for successful complex reservoir development
- Total technology roadmap for future deepwater assets
- The "curse" of subsea infrastructure's longevity: today's challenges and opportunities in designing tomorrow's offshore field developments

Reservoir Characterisation 2 (ROOM C)

- Sequence stratigraphy, sedimentology and reservoir modeling of the coral reservoir, offshore northern Mozambique
- Drilling risks management and reservoir characterization with deep directional resistivity logging while drilling
- Advanced logging technology combined with integrated formation evaluation analyses provides confident petrophysical information in the giant gas discoveries of the Levantine basin
- Textures and micro-fractures analyses on drill cuttings to support well charactherisation in carbonate reservoirs

Offshore regulations: warm up for friday special session (SALA VERDE)

- The new EU offshore safety directive – key requirements and impacts
- Offshore HSE regulations: the new paradigm in the Mediterranean Sea and its practical consequences
- Towards the transposition of Directive 2013/30/EU in Italy
- EU directive on offshore safety - problem or opportunity?
- Transposition of the "marine strategy" European Directive: implication of the legislative decree 190/2010 on hydrocarbon sector offshore

From 19.00 Ravenna is 'Bella di sera' to welcome OMC participants to the city centre

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