The sixth edition of ROMANIA GAS CONFERENCE, the event dedicated to the oil and gas industry in Romania, which took place in Bucharest by the end of October, brought to attention the studies carried out by the companies in the field regarding the HSEQ sector, their investment and development plans for the future, the opportunities and challenges facing the natural gas industry in Romania and in the region, innovative solutions, modern technologies and equipments for the natural gas field, regulations, policies and general issues aiming at the exploration and exploitation of the conventional and unconventional gas reserves.

During the two days of the conference, the participants exchanged ideas and information, and took the opportunity to promote their products and services for the oil and gas industry in a special exhibiting room.

The analysis focused on the current situation, the progress registered until now and the prospects for natural gas national industry, was initiated by Andrew Costin – President of Petroleum Club of Romania, who launched to specialists the invitation to examine the opportunities and the challenges the above mentioned field is facing in the context of international evolutions.

Professor Aureliu Leca – Executive Director with the Romanian Association for Promotion of Energy Efficiency, expressed several considerations on the policy of using the natural gas, the impact of price liberalization – economic and...
Mihai Spataru, NAMR representative, completed the general view on the natural gas national market, adding that, as compared to other states, Romania has diversified natural resources and is placed third in Europe from the point of view of energy independence. He said NAMR is interested in cooperating with global companies, having resources and know-how, so that one of the priorities is the bringing up to date of the legal framework in order to meet the demands of the interested investors. A new round of concessions for 35-36 onshore and offshore perimeters is to be organised shortly, he added.

Reviewing the experts’ opinion, we could conclude that Romania is currently in the position to get quantifiable benefits due to its geo-strategic positioning in the south-eastern European space, but it should not be late in finalizing the legal framework needed to attract private capital in the energy field.

Health, safety, environment and quality in oil & gas Industry

The monitoring and implementing best practices aimed to avoid risks are major objectives in the context of worldwide evolutions in the natural gas field, said Dr. Ionut Purica, Energy and Environment Expert, at the beginning of the HSEQ session.

Cantemir Mambet - HSE Expert, referred to the impact of changes in regulatory requirements for safe offshore exploration and exploitation of oil and gas. Following major accidents in this field, the European Commission started in 2010 a review of industry practices and regulations. The study revealed several issues: international law did not address global safety, health and environmental standards for offshore oil and gas platforms; the European legislation was applied only to some aspects in the field; a significant share of the problems were solved by national legislation, which varies from one EU country to another; although oil platforms fell already under a series of existing EU legislation, loopholes existed. Thus, the EC considered for the first time a comprehensive and coherent legal framework in order to provide the highest standards on the prevention, the response and the financial liability.

The expert reviewed the main EU decisions to minimize hazards for a major accident in EU waters and to limit the impact if it occurs. Drawing conclusions, the specialist said that currently, in many EU countries, most third-parties have no liability for compensation for traditional damage caused by the accident. In these conditions, the question is if Romania is confronted with a higher risk or with an ‘opportunity’ and, in such a case, for whom?

Dmitrii Solod - Process Safety Team Leader, OMV Petrom, delivered a speech on HSEQ performance in well engineering. OMV Petrom considers as priority the applying of best HSEQ practices and is an example by itself: on March 26, 2014 the company achieved one year of lost time injuries (LTI) free, out of a total worked man-hours of 4,193,352! The OMV Petrom representative said the achievement is a result of the involvement of the entire team in the risk identification, increased participation to awareness campaigns such as “Safety Observation Program”, and of the safety campaigns linked to the company HSE golden rules. The OMV Petrom personnel is ready to face work safety challenges such as improving the quality of incident investigations, increasing awareness regarding major accident hazards, reinforcing of stop work authorities and others.

Razvan Ionescu - Deputy General Manager, Rina Simtex, approached other issues related to hazard management in the oil and gas sector. Rina Simtex is one of the most important certification organisations in Romania, part of multi-national Rina Group, having more than 150 years of experience. The company provides services such as: inspection
and audit, certification (management systems, product, personnel, social accountability, climate change), training, classification, testing (non destructive, failure analysis, mechanical, fire and calibration, environmental, etc.). The company also provides evaluations and audits in the energy field, for projects, buildings, installations in the industrial and civil sectors. Rina services include technical assistance for projects’ feasibility studies. The group holds local and international accreditations – RENAR, ACCREDIA, ANAB, SAAS, etc.

A modern and complex technological solution contributing to lower accident risks is the 3D model coming from Valentin Vlad, Business Development Manager, Man and Machine – one of the most important suppliers of software for design and production assisted by computer (CAD/CAM) in Europe. The development of digital applications to achieve better safety performance in the energy field is part of the main objectives of the European programme for efficiency and innovation. Visualization became more and more important to win business, while the 3D model is the best way to preserve and pass info through workforce generations, the Man and Machine representative said. He insisted on the fact that simulation before the project is built saves a lot of money on construction and operation phase, as the 3D model offers support to overcome the challenges. As a conclusion, the 3D model is a powerful visual option for companies to keep and maintain engineering data; integrated with data from process the 3D Model is a reliable tool for management decisions.

Innovative solutions, modern technologies and equipment for the natural gas sector.

Weatherford, multinational company with international amplitude, is one of the most important providers of services for the oil and gas industry, constantly determined to find efficient technologic solutions for exploiting the resources by minimizing hazards and by observing the environment quality standards. Ensuring the wells integrity, by observing the best practice and standard in the field, this is the top priority for the company. After reviewing the current problems involving the structural integrity of the wells related to cement channelling, thickness, internal/external corrosion, pipe deformation, burst pressure, compressive strength, pitting, split collars, etc., Otilia Mihăilescu – Wireline Technical Sales, Weatherford, evinced the main diagnosis and evaluation techniques of the above mentioned problems, including the instruments used in this regard. The Weatherford representative enumerated the most efficient solutions for well integrity management, by following the four compulsory steps – identifying the problems, preparing the well, solving the problems, well completion. The conclusions revealed that solving the well integrity problems, by using the Weatherford innovative solutions, leads to optimizing production and to the hydrocarbons’ recovery rate growth, offering a new perspective on mature deposits exploitation.

The depletion of hydrocarbons reserves leads to the need for investments in new technologies and for the use of recovering secondary methods for redeveloping the mature deposits. Within this context, the Siemens approach to increase the recovery rate is based on the method of wellhead compression. Bob Okhuijsen – Sales Manager Field Solutions, Siemens Nederland, pointed to the main situations when such method is needed, the steps of the workflow (modeling and simulation of the production processes, equipment selection, economic assessment) and the advantages of implementing the solution. The experience and the case study presented (on a Gazprom perimeter) evinced the practical application selects the best solution for each particular case. Following the cash-flow diagram as efficiency indicator, one could notice the programme is choosing the best variant for every application. Being an expensive technology, it is very important that correct decisions are adopted in relation to the implementation of this solution.
In the same area of modern and efficient solutions for compression in the gas industry come the options from the National Research & Development Institute for Gas Turbines Comoti, the only institute in the country in this field. Commercial Department Engineer Leonard Trifu underscored the main directions of the research-development activities, with stress laid on saving energy and environment protection. Most efficient are the centrifugal-type compressors and the highly efficient screw-compressors. Before Comoti’s equipment was available, such special units were imported. By developing a partnership with GHH Rand, Comoti delivers on oil and gas market screw compressor and screw compressor packages in a wide range of pressures and flow rates. The list of customers includes OMV Petrom, Linde Gas Hungary, MND Czech Republic and others. The new projects developed by INCDT Comoti include the high pressure screw compressor CHP 220 and the expander group – electric generator (a prototype installed at Transgaz Onesti), last generation equipment and an affordable solution at the same time, efficient and environment-friendly.

The same concern for maximizing the recovery factor of oil and gas, for stabilizing the output by redeveloping deposits and for stopping the natural decline of production is noticed in the case of OMV Petrom, the biggest oil and natural gas producer in South-eastern Europe. Senior Head of Operations Exploration & Production Cristian Todea delivered a speech focused on natural gas production revival in Oltenia region, the most important asset in OMV Petrom’s portfolio, which registers 40 percent of the company’s total output, with 6.3 million cubic metres per day. The development strategy is structured in three stages. On short term (2014 - 2015) there is the ‘Professional excellence Plus One’ stage, on medium term (2016 - 2017) the ‘Let’s get more from what we have’ stage and on long-term (2018+) the ‘Sustainable development’ stage. Although affected by falling demand, gas storing and transporting availabilities, the development of Oltenia region is going on through modernization projects (TUCO Bulbuceni, Totea Deep, CHD Hurzani, Madulari Safety Upgrade, FRD Bustuchin, FRD Totea Vladimir). Within the current domestic market context of natural gas, OMV Petrom has a stable and sound position, prerequisites for a viable strategy of sustainable development.
Another sustainable solution for the oil and gas industry is offered by Siemens and Fiwa – the COMOS platform, an integrated management application using a joint and uniform data basis which provides access to all the project data, for every stage of the project. The COMOS software solutions, presented by Sales Manager Fiwa Ro, Adrian Ignat, are providing the basis for international cooperation, irrespective of location, for different teams, for the entire lifecycle of the equipment. By storing all information in a central data base, COMOS facilitates permanent access to the data for all teams involved in the project, both during design and full operation stages. The advantages for the customer are represented by the efficient accomplishment of specific demands, the harmonious integration of solutions into the system, increase in competitiveness, better decision-making, optimization of the workflow, durable solutions for the equipment’s entire lifecycle, etc.

Opportunities and challenges for the natural gas industry in Romania and in the region

According to Sorin Keszeg - Project Manager “Black Sea” Project Management Unit, Transgaz – the implementation of new gas transmission projects in the region necessitates the modernization and development of the natural gas national transport network, so that it would be able to transport the gas coming from the Caspian region and from the Black Sea. Thanks to its favourable geostrategic location, at the crossroads of well developed gas markets of Central Europe and the major gas reserves of the Middle East, Romania could become a potential bridge between the increasing energy flows transport from East to West. Considering Azerbaijan’s ambitious plans to increase its gas exports, Romania is looking for new transport solutions for the additional volumes from the Caspian region (the Danubian pipeline) bringing its contribution to EU goals. Furthermore, Romania is turning into a bridge between Central Europe and Eastern Europe – Transgaz needs to complete the ‘missing link’ for the regional energy corridor. The natural gas national transport operator focuses on the implementation of projects to ensure full reverse flow capacities in all cross-border interconnection points and aiming at interconnections between the transmission system and the transit pipelines. However European financing is needed for these projects, total estimated investments amounting to EUR 1.3 billion.
The SOCAR (the state oil company of Azerbaijan) regional interconnecting strategy was presented by Hamza Karimov - CEO, SOCAR Romania, who underscored the main opportunities for Romania within the current context of regional network reconfiguration, starting from SOCAR’s and Azerbaijan’s international experience. The SOCAR representative shares the same belief as his fore speaker in Romania’s future regarding energy. He analyzed the strong and the weak points to accomplish this goal. He drew the attention to some impediments such as the interconnection of the transport network with the neighboring countries – an undergoing process, the price of energy, the high costs for modernizing the energy producing units, the rapid expansion of the renewable energy field. On the other hand Hamza Karimov enumerated the most important SOCAR investments in projects of regional interconnection – the TANAP, TAP pipelines and the AGRI project. Among other issues, he pointed to the role three countries in the region (Azerbaijan, Turkey and Romania) play in providing energy security, adding that this is an important factor for regional cooperation and that, based on social and economic reasons, it should become a political priority. Romania’s ‘best cards’ were also enumerated, as Romania would become a ‘star’ on the regional map, once exploitations begin in the Black Sea. Romania would be an essential regional hub for energy from the perspective of new supply sources on the European market.

"Romania will be the future gas hub for Europe in 2025" – the statement was made by Chandrasekhar Ramakrishnan - Director Business Development, Tecon Engineering. By using the comparison between Norway (seventh in the world on the natural gas market) and our country in regard with proven/estimated deposits and with the perspectives for development, he argued that Romania stands the best chances to become a natural gas regional network. 

Having considerable hydrocarbons reserves, among the most important in Europe, Romania benefits from supplementary natural gas reserves estimated to 2 trillion cubic metres, of which 600 billion cubic metres estimated reserves in the Black Sea and 1.4 trillion cubic metres estimated reserves of shale gas, which should meet the domestic demand for 147 years and imports for 664 years! In order to reach these anticipations, there are several prerequisites: establish a legal and fiscal framework which facilitates offshore and shale gas E&P activities; push interconnectivity with neighbouring states and EU gas grid; this will promote investment of IOCs in E&P and infrastructure and in consequence there will be an increased number of drilling activities; Chandrasekhar Ramakrishnan pointed also to a new business opportunity both for Romania and for Europe – depleted deposits, which could offer an important potential for storing natural gas.
Having an experience of more than 20 years with the Oklahoma University and the City University of New York, Professor Constantin Cranganu delivered an extensive presentation speech on hydraulic fracturing. He covered issues related to conventional/unconventional resources, to policies and to international and Romanian regulations for exploiting the unconventional deposits. The main issues on his agenda were related to Romania - assessment of oil and gas reserves, output, consumption, imports and current deficiencies of the legal framework. Professor Cranganu said that, considering the natural gas consumption in 2013, the current known reserves could meet the demand for approximately eight and a half years. According to the EIA estimates for 2013 – he added – Romania is placed third in Europe, after Poland and France, from the point of view of shale...
gas reserves, its reserves amounting to 1,444 billion cubic metres (technically recoverable). This means that, considering the 2013 consumption, the demand could be met for approximately 120 years! He drew the attention on two issues regarding the legal framework concerning the exploration and exploitation of shale gas: unpredictable amendments on the tax system have a negative impact on investors, this could diminish Romania's capacity to face the tough competition on the market; it is imperative for Romania to update the information on national mineral resources, including on shale oil and gas.

Poland, first in Europe from the point of view of shale gas reserves, is facing also problems related to the new legal framework for wells placed in urban areas, to bureaucracy – the main factor leading to lower work pace, higher costs, technical issues, environment protection, etc. Professor Stanisław Nagy from the AGH University of Science and Technology Krakow provided details on the subject. His speech focused on clarifying the definition of unconventional natural gas reserves, the natural gas sources classification, the properties of unconventional deposits, the stages of exploration and the development of unconventional natural gas reserves deposits in Poland. According to analyst Marcin Krupa, estimations point to a 3.28 percent increase of efficiency during the first five years and to an improvement of the extraction process of up to 75 percent during the following 15 years. However, costs are considerable: USD 15 - 25 billion for developing one concession. New technological and environmental solutions are expected in the future to minimize the risks associated with hydraulic fracturing and, on the other hand, to reduce the impact on the environment.

Professor Georgi Georgiev from the Geology department of the Sofia University has offered details on the evolutions of the natural gas market in the region, on the exploration and production projects’ stages in Bulgaria. Starting from the fact that domestic consumption is covered only 5 to 8 percent from domestic production, the rest being covered by imports from Russia, Professor Georgiev presented the history of the oil and gas industry as well as the level of the conventional/unconventional hydrocarbons reserves in Bulgaria, exploitation opportunities, development perspectives for onshore and offshore deposits. The main conclusions underline the capacity to develop hydrocarbons exploration in the western part of the Black Sea basin. Among all defined exploration trends, those related to the transition zone between the Moesian Platform and the western Black Sea basin are of the highest potential. The main risk factor is the presence of good reservoirs and more volumetric traps.

The presentations are available in full at www.blackseaevents.com and at www.petroleumclub.ro Events section