Full Programme Topics for 20th WPC

Block 1 □ Natural Gas: the energy that makes a difference

Forums:

F1 - LNG producers: latest technological developments in liquefaction and shipping
The world demand for natural gas has renewed interest in the production and transportation of liquefied natural gas (LNG) from resource rich areas in Africa and the Middle East to customers in Asia, Europe and the Americas. This session will explore the opportunities for innovation in LNG technology for liquefaction and shipping. In the LNG liquefaction area, the session will focus on feed gas treating technology, optimization of liquefaction output and key technologies in offshore liquefaction. The increase in LNG global demand and consumption has fuelled a higher demand for LNG ships and vessels. There are numerous challenges associated with growing LNG supplies and the flexibility of such supplies. This session will also explore the innovation in LNG loading and discharge terminals, current LNG tank technologies and optimizing the vessel management portfolio.

Chair: Hamad Rashid Al Mohannadi, Managing Director- CEO, RasGas, Qatar
Vice Chairs: Prof. Vladimir Kapustin, General Director, OAO VNIPineft, Russia
Marjan Van Loon, Vice President LNG, Shell Global Solutions, The Netherlands

F2 - Enhancing LNG storage, regasification and security management
This session will evaluate the current techniques and methodology for efficient storage, re-gasification and security which will include key challenges in setting up an LNG re-gasification terminal, including reliability, proven technology and innovations. The use of the latest technology for the security and safety of the plant, the process and personnel shall also be covered in this session.

Chair: B.C. Tripathi, Director Marketing, GAIL Limited, India
Vice Chairs: Dr. Ali Kheyr-Andish, Managing Director, Iran Liquefied Natural Gas Co. Iran
Philippe Olivier, President & CEO, GDF SUEZ Global LNG (UK) Ltd, France

F3 – Improving efficiency, safety and economics for GTL
The world’s GTL capacity has seen dramatic increases in recent years with Oryx GTL (30,000 bbl/d) in Qatar fully on stream, Pearl GTL (140,000 bbl/d) in Qatar coming on stream and Escravos GTL (30,000 bbl/d) in Nigeria under construction. Further activities in terms of launching new projects, however, have not been seen in recent years, mainly due to the escalation of construction costs. Several players in the industry are nevertheless conducting R&D programs for the progression of GTL technology towards higher efficiencies and lower capital costs. This session will review the status of the existing and potential new projects, progress on developing GTL technologies, environmental aspects of GTL as well as various aspects related to the marketing and usage of the unique GTL products.

Chair: Rafi Baghdjian, Vice President Technical Services Qatar, Qatar Shell, Qatar
Vice Chairs: Noriyoshi Nozawa, Senior Technology Adviser, Chiyoda Corporation, Japan
Thomas R. Walters, President, ExxonMobil Gas & Power, USA

F4 - Solutions for stranded gas
Globally, many gas discoveries are not being developed due to factors such as lack of local market and infrastructure, distance to market, size of accumulation, gas composition and availability of technology. This forum will address potential solutions on how to commercially develop this so-called stranded gas, including development strategies, technological concepts and commercial solutions.

Chair: Marcelo Rosso, International Exploration Manager, Pluspetrol SA, Argentina
Vice Chairs: Nicholas Gay, Finance Director, Compact GTL, UK
Prof. Rudolph Ter-Sarkisov, First Deputy General Director, Gazprom Dobycha Shelf, Russia
F5 - Non conventional gas resources
In an energy-constrained world increasing attention is being focused on sources of natural gas that have previously been considered to be too difficult or costly to develop and bring to market. This session will review the global potential of ‘non-conventional’ supplies of natural gas of all types: coal bed methane (CBM), methane hydrates, gas shales, ‘tight-gas’ and underground coal gasification. It will showcase recent technological developments and projects to access and commercialise such resources, in an environmentally acceptable way.
Chair: Michael Graham, Executive VP & President, Canadian Foothills, EnCana Corporation, Canada
Vice Chairs: Dr. Zhemwu Liu, Deputy Chief Technology Officer, China National Petroleum Corp, China
Dr. Jerzy Stopa, Associated Professor D,Msc, AGH – University of Science & Technology, Poland

Best Practice Keynotes:

BPK1 - Lessons from project management in major gas projects
Project Management was faced with new challenges in recent years developing and implementing world-class LNG and GTL projects safely, on time, and on schedule:
• Technical challenges related to the ever increasing project complexity, under sometimes harsh climate conditions, or complicated by very sour gas;
• New logistics, infrastructure and social issues, caused by the increased size of LNG and GTL projects today, sometimes managing more than 50,000 workers on site;
• Environmental and geopolitical constraints of new frontier locations;
• Optimum contracting & procurement strategies under extremely volatile market conditions.
• Quality of project professionals, supervisors and craftsman.
This session will review the way companies are managing these challenges, mitigating the associated risks, and drive for top quartile performance in project delivery.
Chair: Nobuo Seki, General Corporate Advisor, Chiyoda Corporation, Japan
Speakers: Samir Brikiho, Chief Executive Officer, Amec plc, UK
Andrew Brown, Executive Vice President and Pearl, Qatar Shell, Qatar

BPK2 - Financing gas infrastructure
Major gas infrastructure projects present some of the most demanding and complex financing challenges, even during the best of times. In the wake of the worst global credit crisis on record, and the ensuing market and political uncertainties, this session will bring current perspectives from the industry and the financial community with recent experience in funding such projects – in LNG, in pipelines and in gas storage.
Chair: Muhammad Ghannam, Managing Director, Qatar Gas Transport Company Ltd. (Nakilat)
Speakers: Hassan Mossavi, Expolration Manager, Pars Oil and Gas Company, Iran
Dr. Axel Pierru, Economist, IFP, France

Round Tables:

RT1 - Cross border pipelines: how to meet stakeholder’s interests
With natural gas meeting an ever greater share of primary energy demand in many countries, ensuring reliability and security of supplies continues to rise up the political agenda in importing nations. Those countries committing huge sums to develop gas for export are understandably looking for reassurance on their long-term access to markets. Transit countries need a fair return for maintaining the infrastructure and operations on behalf of both exporters and consumers. Recent experiences around the world indicate that balancing these varying stakeholder needs in the context of existing and planned gas pipelines is getting harder, rather than easier, to achieve. This discussion will explore the views of a variety of such stakeholders.
Moderator: Dr. Janos Zsuga, Chairman of the Board – CEO, FGSZ Ltd., Hungary
Panel Members: Prof. Andrey Konoplyanik, Consultant to the Board, Gazprombank, Russia
Nils Andreas Masvie, Director, Det Norske Veritas, Norway
S. Venkataraman, Executive Director (Business Development), GAIL Limited, India
RT2 - Gas price perspectives: high enough to attract investment, low enough to attract consumers
For the last 50 years gas pricing in many markets has been indexed, primarily to crude oil. But with the enormous volatility in crude oil prices in recent years, coupled with the fact that much natural gas is competing now mainly with energy sources other than oil, especially in power generation and heating, do producers and consumers have continued confidence in this pricing model? This discussion will compare the merits of existing pricing arrangements with alternatives and assess whether and when some of these might begin to take centre stage in commercial negotiations.

Moderator: Patrick Blough, Vice President, Gas Commercialization, Chevron Global Gas, USA
Panel Members: Syed Reza Kasaei-Zadeh, President, NIGEC
Daniel Lauré, Senior Vice President Strategy, Markets & IT, Total SA, France
László Varró, SVP Strategy Development, MOL Group, Hungary

RT3 - Wider applications for natural gas, including CNG and gas to petrochemicals
Demand for natural gas is surging ahead at unprecedented rates, mainly from the power, industrial, petrochemicals, city gas, and transportation sectors. Rising demand and the inability to satisfy this demand has had a major impact on the regional and global economy. This session will evaluate the growing application of natural gas in these sectors, meeting the challenge of demand/supply imbalance and the strategies for adding value throughout the chain.

Moderator: Dr. Mohammed Al-Mulla, General Manager, Qatar Petrochemical Company, Qatar
Panel Members: David Boone, President & CEO, Barrick Energy Inc. Canada
A.Chatterjee, Executive Director, Indian Oil Corporation Limited, India

Block 2 – New Exploration and Production Frontiers and Technologies

Forums:

F6 – Exploring new frontiers: innovation and vision
The success rate is lower today in hydrocarbon exploration than it was in the past, in particular between the 1930s and 1980s. In global terms, even if the Earth still has sizeable oil and gas resources, worldwide consumption has outstripped the discovery rate. Petroleum explorers now face a real challenge to be able to meet the long-term hydrocarbon needs of the world's population, and to do so, the oil industry has to come up with new ideas continuously, pushing back its frontiers a little further each time.

The frontiers involved in frontier exploration are of many types:
- geographical: exploration of new provinces, as yet barely explored or not at all: the Arctic, owing to its extreme weather conditions, is one of tomorrow's challenges,
- geological: exploration of new geological formations in which hydrocarbons are trapped in non-conventional ways: new geological concepts must be defined,
- and finally, technological: exploration under screens (basalt, salt) or in highly complex tectonic environments, which requires increasingly sophisticated seismic imaging techniques; access to deeply buried reservoirs or the ultra deep offshore demands cutting edge imaging, drilling and production technologies.

The purpose of this forum is to give a state of play concerning current frontier exploration, and an outlook on our future exploration based on typical examples. It will be shown that exploring new frontiers is inextricably linked to the development of innovative technologies. This session will focus on providing a vision for the exploration landscape leading to the discovery of future reserves.

Chair: Tim Dodson, Senior Vice President, Statoil, Norway
Vice Chairs: Billy Agha, Ag. Director, Department of Petroleum Resources, Nigeria
Said Mubarak Al-Mohannadi, Director Operations, Qatar Petroleum, Qatar
**F7 - Advances in reservoir management**
Reservoir management is a continuous process that seeks to optimize the development and operation of oil and gas reservoirs for the purpose of maximizing economic resource recovery over the reservoir life cycle. The process utilizes the most appropriate engineering and earth science technologies, while complying to environmental and safety regulations. The session will discuss advances in reservoir management such as matrix / fracture characterization geo-models, advanced simulation models that use dual porosity, dual permeability modelling, assisted history matching, and uncertainty analysis, application of I-Field technology, water injection / production management, production / injection optimization, enhancing sweep efficiency, and maximizing oil recovery.

**Chair:** Sh. Faisal F.J. Al Thani, Vice President, Maersk Oil Qatar AS, Qatar  
**Vice Chairs:** Dr. Mohammad Emadi, Director of Research R&T and Member of the Board, NIOC, Iran  
Waleed Mulhim, Manager Reservoir Eng. Saudi Aramco, Petroleum Engineering, Saudi Arabia

**F8 - Enhanced recovery: new challenges and technologies**
Enhanced Oil Recovery is a term commonly used to describe processes for adding up reserves beyond the horizons of classical waterflood, and in specific cases of heavy oil, recoveries above the primary limits. The three major widely acceptable EOR methods currently in operation are:

- Thermal (application of heat),  
- Miscible/Immiscible (mixing oil with a solvent)  
- Chemical (flooding with chemicals),

Other methods can involve CO2 injection and also, Microbial EOR. All the challenges and techniques will be covered in this forum.

**Chair:** Dr. Abdulaziz Kaabi, Chief Technoloist, Saudi Aramco, Exploration and Petroleum, Saudi Arabia  
**Vice Chairs:** Jeroen Regtien, VP Hydrocarbon Recovery Technologies, Shell Internatinoal Exploration and Prod BV, The Netherlands  
Dr. Ganesh Thakur, Vice President and Global Advisor Res Mgmt, Chevron Energy Technology, USA

**F9 – Breakthroughs in subsurface imaging and direct hydrocarbon detection**
New techniques and software have been developed in recent years that allow for the reliable imaging of the spatial geology of oil and gas fields and the prediction of petrophysical properties of reservoirs and pore fluid composition from a set of surface and downhole geophysical measurements. Case histories showing successful applications of such techniques and software to onshore and offshore clastic and carbonate reservoirs. are the subject of discussion of this forum.

**Chair:** Paal Kibsgaard, President, Reservoir Characterisation, Schlumberger Limited, France  
**Vice Chairs:** Francisco Ortigosa-Fernande, Director of Geophysics E&P, Repsol, Spain  
Dr. Shouli Ku, Vice President, E&P Research Inst, Sinopec, China

**F10 - Drilling and completion technologies applied to challenging reservoirs**
The toughest challenge facing the international E&P sector is to ensure high recovery oil and gas from geographically and technologically challenging reservoirs both onshore and offshore. For that a consistent system of planning, drilling and completing of exploration, appraisal, production and injection wells is required, including but not limited to:

- Conducting an integrated plan of well architecture;  
- Finding rigs and equipment optimized to the climatic and technologic challenges;  
- Selecting drilling techniques optimized to (reservoir) geological (well bore stability, pressure regime) conditions predicted;  
- Selecting optimal well test and completion and production techniques

Full field case stories are going to show balanced (onshore and offshore) examples of how to cope in a cost - efficient way with this complex challenge through the teamwork of experienced professionals.

**Chair:** Luiz Felipe Rego, Head of Well Engineering Technology, Petrobas E&P, Brazil  
**Vice Chairs:** M.D. Joshi, Excutive Director-CDS, Oil and Natural Gas Corporation, India  
Joel Kiker, Vice President Drilling, ExxonMobil Development Company, USA
F 11 - Unconventional high tech applied to the upstream sector
Exploring, developing, and producing oil and gas in an efficient, safe, and environmentally-responsible manner is our mission in the E&P industry. As exploration basin discoveries dwindle, and current reservoirs are depleted, new unconventional high technology approaches, processes and tools have and will continue to emerge in the industry. This session will present unconventional high tech in E & P such as the application of nano-technology, biotechnology, optical fibres, etc. in the industry.

Chair: Anna Aabø, CEO, Int. Research Inst. Stav. Norway
Vice Chairs: Samer Ashgar, Manager, Saudi Aramco Exploration and Production, Saudi Arabia
Ricardo Beltrão, Production General Manager, Petrobas, Brazil

Best Practice Keynotes:

BPK3 – Developments of deep offshore and deeply buried reservoirs
Notwithstanding the odd reduction owing to specific financial or economic situations, the demand for hydrocarbons has grown steadily in the past and is set to follow the same trend in the future. In parallel to the increase in demand, the production from mature fields is regularly decreasing. The upstream oil industry now faces a major challenge to increase production through the continuous development of new hydrocarbon fields.

The need to satisfy the world's growing thirst for hydrocarbons means producing from oil and gas fields at ever greater depths (deeply buried reservoirs), or under ever deeper water depths (~ultra- deep offshore). Our industry has begun to tackle developments that require considerable technological boldness to produce:

- either deeply buried reservoirs characterised by High Pressures and High Temperatures (HP/HT) with all the problems generated by these extreme conditions,
- or reservoirs located at great water depths: these fields have to be developed; sometimes satellite reservoirs have to be tied back to a very distant processing unit, while coping with the difficulties of producing more and more viscous oils.

Through use of representative examples this session will illustrate some of the technical challenges that our industry has experienced, or still has to face, the ground-breaking solutions that have already been found, and the innovations we hope to see in the next few years.

Chair:
Speakers: Marcio F.C. Bezerra, E&P New Ventures General Manager, Petrobas, Brazil
Michel Hourcard, Senior Vice President Development and Operations, Total SA, France

BPK4 – Advances in extra heavy oil development technologies
Heavy oil and bitumen are found in many places worldwide, with the largest deposits in the world being in Canada (Alberta), Venezuela and the former Soviet Union. Other countries having such deposits include U.S.A., Russia, Cuba, Indonesia, Brazil, Trinidad and Tobago, Jordan, Madagascar, Colombia, Albania, Romania, Spain, Portugal, Nigeria and Argentina. The main methods for extraction are generally mining and in situ. Within the insitu methods are the following processes:

- Steam Assisted Gravity Drainage (SAGD)
- Cyclic Steam Stimulation (CSS)
- The Vapour Extraction Process (VAPEX)
- Toe to Heel Air Injection (THAI)
- Cold Heavy Oil Production with Sand (CHOPS)

The recovered bitumen may be upgraded at the plant site or diluted and sent through pipelines for production of synthetic crude. Bitumen and Heavy Oil are deficient in hydrogen, compared to typical crude oils. Upgrading is the process that changes bitumen into synthetic crude oil. There are four main steps to the upgrading process: Thermal
Conversion, Catalytic Conversion, Distillation and Hydro treating. Different companies use these processes in different ways and at different stages in the transformation of bitumen/ heavy oil into synthetic crude but the basic principles behind this transformation remain the same. The state of the art of the industry worldwide will be described in this Best Practice Keynote.

**Chair:** Rafael Tenreiro, Director of Exploration and Production, Cupet, Cuba

**Speakers:**
- Dr. Eddy Isaacs, Executive Director, Alberta Energy Research Institute, Canada
- Prof. Anatoly Zolotukhin, Deputy Chancellor for International, Gubkin Russian State University of Oil and Gas, Russia

**Round Tables:**

**RT4 – Peak oil: reality or mirage?**
Global hydrocarbon production from existing oil and gas provinces will start declining due to the depletion of current producing reservoirs and the decreasing number and size of new fields being brought on-stream from the traditional plays. While peak production will take place in the future, the reality is that experts differ widely on how early, or late, this will take place and what the peak production volume will likely be. The discovery of new hydrocarbon basins and accumulations in the territories already well studied as well as in new frontiers until recently not economically feasible, and new Enhanced Oil Recovery (EOR) technologies, keep postponing this peak/decline scenario further into the future. Still, a hydrocarbon production will inevitably reach its peak as these are not renewable energy sources. How far the industry can postpone this scenario and how to cope with the energy demand when this will happen will be the subject of this round table.

**Moderator:** Dr. Mariana Gheorghe, CEO, Petrom OMV Group, Romania

**Panel Members:**
- Prof. Anatoly Dmitrievsky, Director, Oil and Gas Research Institute of RAS, Russia
- Marco Rasi, Vice President Engineering, Exxon Mobil Upstream Research, USA
- N.K. Verma, GM-BM, Frontier Basin, Oil and Natural Gas Corporation Limited, India

**RT5 – Reserves and Resources Classification: lessons of new regulations**
Recently substantial changes have taken place in the regulations of reporting reserves and resources. Regulatory bodies with national (Mining Bureaus, Petroleum Directorates, Agencies, Ministries) and supranational (SEC) scopes, professional organizations of the industry (American Association of Petroleum Geologists, Society of Petroleum Engineers, Society of Petroleum Evaluation Engineers, World Petroleum Council, International Accountants Standard Board) and global organizations (United Nations Economic Commission for Europe) equally contributed to update the earlier classification codes to reflect advances in technology and to restore the credibility in reserves reporting. In this session representatives of high profile authorities and regulatory bodies and stakeholders are going to discuss the impact of the new regulations and future steps to be taken.

**Moderator:** Michael Lynch-Bell, Partner in Charge – Global Energy, Emst & Young, UK

**Panel Members:**
- Douglas Carsted, Vice-President Geoscience, Sproule International Limited, Canada
- Dr. Dominique Marion, Geoscience Reserves Manager, Total SA, France
- Prof. Davrilov Victor, Head of Geological Department, Gubkin Russian State University of Oil and Gas, Russia

**RT6 – Attracting investments to capital intensive E&P projects**
The International Energy Agency in its 2008 World Energy Outlook - Reference Scenario projects that more than US$11 trillion will need to be invested in worldwide oil and gas infrastructure over the 2007 to 2030 period to offset production declines and to meet growing demand. How this investment will be funded and executed is a major challenge for the industry given volatile product prices, difficult credit and equity markets, long lead times and project life and the increasingly evolving relative roles of IOCs and NOCs in many of the most prospective hydrocarbon areas of the world. This Round Table discussion will bring together representatives of IOC’s, NOC’s, financial institutions, sovereign wealth funds and governments to address the challenges of funding energy investment in a changing world.

**Moderator:** John E. Martin, Managing Director, Oil & Gas, Standard Chartered Bank, Australia

**Panel Members:**
- Dr. Andras Huszár, Group Treasurer, Mol Group Treasury, Hungary
- Patrick Pouyanne, Senior Vice President Strategy Business Dev. Total SA, France
- Jay Pryor, Vice President, Business Development, Chevron Corporation, USA
Block 3 – From the well to the consumer: innovations in refining, transportation, fuel technology and petrochemistry

**Forums:**

**F12 - New refinery technologies to meet feedstock flexibility, transportation fuel demand and quality**
Future refining will be characterized by the need for an increased flexibility with respect to processing heavier feedstocks with higher sulphur and metals content on the one hand and the requirement to convert more of the (heavier) barrel into lighter, high quality transportation fuels on the other hand. Moreover, refineries will have to cope with changes in the demand pattern between diesel fuel and motor gasoline. In this session, advanced technologies to meet these challenges will be discussed. Emphasis will be on progress in the processing of heavier feedstocks and on innovative routes for the manufacture of high-quality gasoline (e.g., via the valorization of refinery streams containing light olefins) or diesel compounds (e.g., from light cycle oils).

**Chair:** Robert Storey, Director, Merchant Energy Limited, UK
**Vice Chairs:** Thomas Frewer, Head of Strategy & Portofolio Central Europe
Adriana Petrovic, Director of HSE, INA Industrija Naftne d.d. Croatia

**F13 - Tailored fuels for future combustion engines**
Future combustion engines with increased performance and efficiency will require specially designed fuels in order to unlock their full potential. Moreover, in many parts of the world, bio-derived components are increasingly blended into diesel fuel or motor gasoline. Hence, this session will focus on the developments in new production technologies for tailor-made and for biomass-based fuels. Emphasis will be placed on new synthetic compounds useful as blending components for gasoline or diesel and to fuel components derived from biomass (e.g. bio-ethanol, diesel fuel produced via hydrotreating of plant oils or via gasification and “reassemble” of biomass). Biofuel blending experiences will also be featured in this session.

**Chair:** Dr. Tobias Losche-Ter Hörst, Director Research, Volkswagen AG, Germany
**Vice Chairs:** Simo Honkanen, SVP Sustainability and HSSE, Finland
Nasser Wohaibi, Manager R&D Center, Saudi Aramco, R&D, Saudi Arabia

**F14 - Technology and feedstock changes in petrochemistry**
Petroleum is the major feedstock for the chemical industry. Driven by its high price volatility, its regional distribution and limited reserves, the petroleum industry faces pronounced changes in its feedstock basis. The latter will broaden in the future to include natural gas, oil sands, coal and biomass. Necessarily, these feedstock changes imply technology changes in order to efficiently produce basic petrochemicals, in particular light olefins and aromatics. Recent developments in these areas will be addressed in this session. In particular, contributions on the production of light olefins from alternative sources via, e.g., direct (oxidative) coupling of methane, methanol conversion (MTO, MTP) or via synthesis gas (Fischer-Tropsch synthesis) are solicited.

**Chair:** Arpad Olvaso, CEO, TVL Plc. (Member of MOL Group), Hungary
**Vice Chairs:** Dr. Mohammed Al-Mulla, General Manager, Qatar Petrochemical Company, Qatar Mohammad Jafari, R&T Director, National Petrochemical Company, Iran

**F15 - Heavy oil and residue upgrading**
As conventional heavy crude and unconventional extra heavy oil tend to become increasingly more significant sources of refinery feedstocks the demand for lighter and less environmentally impacting products, such as high grade gasoline for transportation and naphtha for petrochemistry, will grow as well. This session will discuss the advanced refining technologies that will be required in order to yield such high quality products from an increasingly heavier feedstock mix in a cost effective and environmentally friendly manner as well as where the upgrading will take place.

**Chair:** Prof. Yuzhen Zhang, Chief Engineer, China National Offshore Oil Corp, China
**Vice Chairs:** Ginjro Fujima, Fellow, Technology & Engineering, Chiyoda Corporation, Japan
Dr. Josef Lichscheidl, Senior Advisor, OMV Refining & Marketing, Austria
Best Practice Keynotes:

**BPK5 - Refinery maintenance and operational reliability**
In recent years higher oil prices and energy conservation have forced a squeeze on operational costs whilst at the same time seeking more efficient and continuous running of refining units. This session will discuss in depth safety and measures to keep stable operations both in hard and software by applying lessons from practical experiences and risk assessment.

**Chair:** K. Murali, Director Refineries, Hindustan Petroleum Corporation Limited, India  
**Speakers:** Dr. Klaus Niemann, Managing Director, PCK Raffinerie GmbH, Germany  
Artur Thernesz, Director, MOL Downstream Development, Hungary

**BPK6 - Long distance transportation of crude oil and products**
Long distance transportation of crude oil and refined products by ship and pipeline is expected to grow in the future given the increasing geographic mismatch between demand growth and sources of incremental oil supply. The Middle East, Eurasia and Africa in particular are expected to fuel demand growth in China, India and Europe which will require new pipeline and marine transportation capacity. This Best Practices session will feature successful case studies of new pipeline and shipping solutions that have met the challenges of geopolitics (including piracy), stakeholder support, funding, technology, cost and environmental impact.

**Chair:** Prof. Vasiliev Gennadiy, Head, Department of Pipeline & Storage, Gubkin Russian State University of Oil and Gas, Russia  
**Speakers:** Henrik Madsen, CEO, Det Norske Veritas, Norway  
Dr. Ali Vatani, Assistant Professor, Tehran University, Iran

Round Tables:

**RT7 - Energy efficiency and emission reduction**
Beside feedstock costs, one of the main additional cost components of modern refinery products is energy consumption during the production process which is necessarily linked to emissions. In addition, the reduction of SOx and CO2 emissions from mobile sources by providing high-quality fuels is at the same time linked to an increasing CO2 volume in refineries. Moreover, the impact of the manufacture and combustion of biofuels on the total amount of emissions is still under debate. The complex interplay of these factors and ways for their optimum balance will be the key topic of this discussion session.

**Moderator:** Dr. Peter J. Seifried, Managing Director, Shell Deutschland Oil GmbH, Germany  
**Panel Members:** A. Deshpande, GM (R&D), Engineers Limited  
Sherman Glass, President, ExxonMobil Refining & Supply Company, USA  
Neale Johnson, Senior Executive, Accenture, UK  
Ernst Meyer, Director, Det Norske Veritas, Norway  
Dr. Nikolay Seregin, Project Director, Gazprom Neft, Russia

**RT8 - Lessons learned from refinery project management**
Longer term demand for oil products is expected to continue its rising trend. Also the trends for changes in the refinery products slate, more diesel and cleaner products, is expected to continue. Finally, geographical demand trends will impact the need for changes in the refining industry. All these changes have been or will be accomplished by capital projects, including debottlenecking projects, new units to produce cleaner fuel components, refinery expansions or grassroots refineries. Backed up by scientific and operational experience, project management has become increasingly effective over time to reduce project cycles, increase cost efficiency and improve safety performance. This session will focus on the experience from refinery projects, helping to move the industry forward well into the 21st century.

**Moderator:** László Thóth, DS Project Dev. Mgr., MOL Group, Hungary  
**Panel Members:** Wael Al-Jasem, Senior Engineer Project Control, Clean Fuels Project 2020, Kuwait National Petroleum Company, Kuwait
Block 4 □ Complementary Energy Sources

Forums:

F16 – Biofuels and biomass: feedstock options life cycle analysis
Biofuels, particularly ethanol, biodiesel and biomass, already contribute a significant proportion of the energy of many countries with large agricultural land availability. Many industrialized countries are also implementing policies to diversify their sources of energy, including an increasing contribution of fuels derived from various sources of organic matter. Increasingly, however, the biofuel industry will have to rely on feedstocks that can yield energy at competitive costs, without significant impacts on the environment and usage of agricultural lands, and with no economic subsidies. This session will address the most recent developments in the utilization of new feedstocks, such as cellulosic, lignocellulosic and algal organic matter, including an assessment of the energy efficiency, environmental impact and life cycle analysis of CO2 emissions.

Chair: Melissa Stark, Senior Executive, Accenture, UK
Vice Chairs: Henrik Erämetsä, Manager, Strategic Development, Neste Oil Corporation, Finland; Prof. Luiz Horta Nogueira, Professor, UNIFEI, Brazil

F17 – Wind and solar short and long term perspectives
According to the analysis made by the International Energy Agency (IEA) and other energy organizations the use of renewable energy sources has been expanding rapidly in recent years and this trend is set to continue. In the IEA’s Reference Scenario the share of renewables (including modern biomass) in the global primary energy mix is expected to increase from 7% in 2006 to 10% in 2030. Wind and solar energy with their abundant resources are amongst the most attractive options for renewable energies. Global output of wind power is projected by IEA to increase eleven-fold, becoming the second-largest source of renewable electricity after hydro by 2010. Worldwide, electricity generation from solar photovoltaic’s and concentrating solar thermal power (CSP) is now tiny but with great potential to be developed. A variety of issues related to wind and solar energy will be discussed, including the progress in research and technology advances; the barriers to their development; the economy and investment for their development; environmental concerns; future perspectives, etc. In addition, the storage and transmission of wind and solar energy as well as how to make them more reliable in power generation and adaptable to the electricity grid are also key topics.

Chair: Naels Bergh-Hansen, CEO, DONG Energy Power, Denmark
Vice Chairs: Jim Davis, President, Chevron Energy Solutions, USA
Gus Schellekens, Global Solar Expert, PwC, UK

F18 □ Clean coal technology
At present, fossil fuels account for 80% of the world’s primary energy mix and as projected by many energy related organizations this percentage will not be changed even in the year of 2030. Over the same period, coal continues to account for about 28% of the world’s primary energy mix and half of fuel needs for power generation as well. Green house gas control is an urgent task for meeting the challenge of global climate change. Coal combustion accounts for a major part of the energy-related CO2 emission. It is expected that the development of clean coal technology (CCT) can be an effective approach for significantly reducing the CO2 emission. This forum will discuss the current status and the future prospects of the CCT technology including the latest CTL technology; the best practices of CCT projects as well as the policies and regulations related to CCT applications.

Chair: Joan MacNaughton, Senior Vice President, Power & Environmental, UK
Vice Chairs: A.Deshpande, GM Research & Development, Engineers India Limited, India
Prof. Gang Xiao, Chief Scientist, CNOOC New Energy Investment, China
F19 - Geothermal and hydro options
Globally, geothermal power is the fourth largest source of renewable electricity after hydro, biomass and wind. Conventional geothermal resources are becoming more competitive with coal and gas-fired plants for providing baseload power, due to clean energy incentives and higher power prices. These improved economics are enabling projects at smaller scales and at lower resource temperatures. Recent progress in Enhanced Geothermal Systems will open up the possibility of large scale development of non-traditional geothermal systems. Up to now only about 30% of estimated global hydro power resources have been developed. This session will focus on addressing key technical and market challenges for increasing geothermal and hydro development.

Chair: Alison Thompson, Chairman/Executive Director, Canadian Geothermal Energy Assoc, Canada
Vice Chairs: Nicholas Blessley, Manager Strategic Planning, Qatar Petroleum, Qatar
Ábel Galácz, VP Corp. Business Development, MOL Group, Hungary

Best Practice Keynotes:

BPK7 - Feasibility of hydrogen as an energy source
Hydrogen has been touted as a carbon-free energy source for the so-called hydrogen economy. It has been proposed as a fuel for fuel cell vehicles and as an enabler for carbon capture and sequestration technology for power generation and refineries (large stationary combustion sources). Realization of the hydrogen economy has been delayed due to high costs and performance challenges of fuel cells, on-board hydrogen storage and hydrogen production and distribution infrastructure. Moreover, large volumes of hydrogen are needed to upgrade increasingly heavy and sour hydrocarbon feedstocks to transportation fuels. This session will explore priorities for hydrogen research and development and hydrogen utilization along the energy value chain.

Chair: V.S. Pkhde, Executive Director, Indian Oil Corporation Limited, India
Speakers: Hajime Okazaki, Director and Senior Vice President, JX Nippon Oil & Energy Corporation, Japan
Dr. Ian Potter, Vice President Energy, Alberta Research Council, Canada

BPK8 - Comparative analyses of automotive fuel sources
The oil and automotive industries are implementing joint efforts to deliver better quality fuels and more energy efficient and environmentally friendly cars. This session will bring together experts from the energy and automotive industries to present an overview of the latest development in alternative automotive fuels, including electricity, natural gas, hydrogen and biofuels. The session will address the past achievements and future perspectives in fuel quality, energy efficiency and cost reduction and how the increasing demand for automotive fuels will be meet in the foreseeable future.

Chair: S. Roy Choudhury, Director Marketing, Hindustan Petroleum Corporation Limited, India
Speakers: Jarmo Honkamaa, Director, Neste Oil Corporation, Finland
Kuji Oyama, Director, Japan Petroleum Energy Center, Japan

Round Tables:

RT9 - Cost vs. benefits of non fossil fuels
Even though fossil fuels will comprise the largest part of the world's energy matrix for the foreseeable future other sources of energy are gaining rapid market share and attracting very significant investments around the world. Non fossil fuels, including biofuels, wind, solar, biomass, tidal, wave and geothermal sources of energy, can play a significant role in providing security of supply to major consuming countries and economic and social benefits to producing nations. However, the production cost of such complementary sources of energy may render them marginally attractive or uneconomic, particularly during the low price periods of a volatile energy market price. Furthermore, the large scale production of non fossil fuels may have significant impacts on the environment, CO2 emissions and in certain cases requires the utilization of vast agricultural land farms and water resources. In this Round Table the debaters will discuss the economic, social and environmental costs and benefits of non fossil fuels and how these may contribute to sustainable supply of energy for the future generations.

Moderator: Carlos Fraga, R&D Executive Manager, Petrobas, Brazil
Panel Members: Paulo Pinho, Director, BP Biofuels, Brazil  
Wim Thomas, Head Energy Team, Global Business, Shell International BV, UK

RT10 - The energy mix of 2050
Fossil fuels are the world's vital source of energy and will remain so for many years to come which means facing a series of challenges, environmentally, economically and socially. To meet these challenges and ensure the sustainability of our energy supply to meet growing energy demand is a problem that must be addressed. At present, in the world's primary energy complementary energy sources such as nuclear and hydro accounts only for about 6% and 2% respectively; biomass and waste account for 10%; other renewable energy is less than 1%. There are quite a number of world energy structure predictions for 2030, but what will be the energy mix for 2050 and beyond? Different scenarios will be explored
Moderator: Jean-Jacques Mosconi, Senior Vice President Strategy, Total SA, France
Panel Members: John McDougall, President, National Research Council Canada, Canada  
Peter Newman, Company Director, UK  
Don Painter, Partner, Energy Practice Leader, PricewaterhouseCoopers (Middle East), UAE

Block 5 – Sustainability Commitment: environment, social, economy, education, governance

Forums:

F20 Industry responses to climate change
Climate change is on the top of the agenda for most governments and the global society. The oil and gas based industry accepts being a part of the problem, but is also as a key player in finding and developing solutions. The forum will address the industry responses to mitigate climate change – company policies and initiatives addressing R&D, technology, and global and local incentives. Practical examples on how market mechanisms are utilised, complementary energy developments, energy efficiency initiatives and Carbon Capture and Sequestration (CCS) will be presented.
Chair: Wishart Robson Climate Change Advisor to the President, Nexen Inc., Canada  
Vice Chairs: Manoelle Lepoutre, Senior VP Sustainable Development, Total, France  
Franz Willym Sorensen, Head of EOR CO2 Project, Maersk Oil, Denmark

F21 A Societal license to operate: HSE and community development
The oil industry has long recognized that good corporate citizenship provides companies with an effective competitive edge in gaining access to good investment opportunities, implementing large scale projects and conducting operations. In order to gain a license to operate from society the oil companies have engaged the local communities, governments and NGOs in their business plan, creating truly win-win situations. This includes investment in training of local people, promoting the growth of local businesses and providers of goods and services, promoting good health, safety and environmental practices both within the company premises and the neighbouring communities, among other practices. This forum will discuss the various approaches adopted by companies that succeeded in establishing long lasting, mutually beneficial relationships with local communities as a way to actually be more cost effective and profitable.
Chair: Rhonda Zygocki, Vice President – Policy, Government & Public, Chevron Corporation, USA  
Vice Chairs: Dozie Irrechukwu, Deputy Director, Department of Petroleum Resources, Nigeria  
Amanda Pereira, Projects Manager, ARPEL, Uruguay

F22 Managing water in upstream and downstream operations
The oil and gas industry produces large amounts of non-potable water entrained in produced oil and gas that needs to be separated and managed in a way that is environmentally and economically sound. The industry has made significant progress in treating, recycling and reusing produced water as an asset, reducing the environmental impact of water disposal operations and in selected situations, creating a source of water for other users. The industry is also
a significant user of water resources in upstream operations to enhance oil recovery from both conventional and non-conventional oil deposits and in downstream upgrading and refining operations. This Forum will focus on technological advances, innovative solutions and best of class management practices in managing water production and use in the industry.

**Chair:** Dan McFadyen, Chairman, Energy Resources Conservation, Canada  
**Vice Chairs:** Prof. Valery Petrosyan, Full Professor, Department of Chemistry, Lomonosov Moscow State University, Russia  
Dr. David White, President, Schlumberger Water & Carbon Services, France

### F23 – Social Responsibility requirements for financing energy projects

Demonstrating the commercial merits of a planned project is no longer nearly enough to secure funding in the international capital markets. Standards, regulations and guidelines have been issued by a range of agencies and institutions addressing the impact of major projects on safety, the environment, human rights and the community, including considerations such as local content and local employment, transparency and minimisation of the risk of corruption. This session will describe how these factors need to be addressed thoroughly and effectively, right from the early planning stages through to the construction, commissioning and operational phases if major projects are to succeed, on time and on budget.

**Chair:** Andrew Bartlett, Managing Director, Global Head of Oil & Gas Project Financing, Standard Chartered Bank, UK  
**Vice Chairs:** Saif Al-Naimi, Director, HSE Regulations & Enforcement, Qatar Petroleum, Qatar Alexandre Penna Rodrigues, Executive Director, Petrobras, Brazil

### F24 - Attracting and retaining people

In the oil and gas industry, which has become extremely competitive over the last few years, manpower is the key to success. Unfortunately, on a global scale, the inventory of available competencies does not always match that of the industry’s needs.

This shortfall is attributed to a low recruitment rate for several decades and a poor image of oil and gas companies. Age discrimination within the industry and the resulting retirement of senior professionals must therefore be offset by hiring recent graduates and retaining them.

The purpose of this forum is to review the actions necessary in the oil and gas industry to:

- attract the younger generations to the technical professions in the industry,  
- Attract more women to the industry  
- promote a high-level academic education on an international scale,  
- continue to train effectively new hires,  
- offer attractive career prospects, and address staff retention and diversity  
- use the skills of experienced senior personnel more and more efficiently  

**Chair:** Louise Kingham, Chief Executive, Energy Institute, UK  
**Vice Chairs:** Cesar Gonzalez, Executive Secretary, ARPEL, Uruguay  
Reinhart Samhaber Senior Vice President, OMV Explorations & Production, Austria

### Best Practice Keynotes:

**BPK9 ▪ Ethics and governance practices in the oil and gas industry**  
Ethical behaviour and good governance are key factors contributing towards the industry’s sustainability. Lessons learned and best practices from corporate responsibility and community development projects and experiences with initiatives like Extractive Industries Transparency Initiative, Global Compact, the Voluntary Principles on Security and Human Rights and others, will be presented in this session.

**Chair:** Willy Egset, Vice President, Statoil, Norway  
**Speakers:** George Brown, Partner, Reed Smith Butlers, UK  
Bernard Claude, Chairman of the Ethics Committee, Total SA, France
BPK10 - Latest developments in Carbon Capture and Sequestration
Carbon Capture and Storage/Sequestration (CCS) is seen as a potential major contributor in reducing greenhouse gas emissions from oil and gas production and from the power generation industry. Several R&D programs and demonstration projects over the last decades have moved understanding and acceptance of CCS forward. This session will address examples of the latest developments from the entire CCS value chain – capture, transportation and storage/sequestration/utilisation.

Chair: Rich Kruger, President, ExxonMobil Production Company, USA
Speakers: Trude Sundset, Vice President, Statoil, Norway
Peter Watson, Deputy Minister, Alberta Energy, Canada

BPK11 - Promoting diversity
People are not alike, everyone is different. Diversity therefore consists of visible and non-visible factors, which include personal characteristics such as background, culture, personality and work-style in addition to the characteristics that are protected under discrimination legislation in terms of race, disability, gender, religion and belief, sexual orientation and age. Harnessing these differences can create a productive environment in which everybody feels valued, their talents are fully utilised and organisational goals are met. This session will highlight best practice in this area from the oil and gas industry and show how organisations successfully embrace diversity to measurable benefit.

Chair: James Arnott, Senior Executive, Accenture, South Africa
Speakers: Huda Ghoson, General Manager, Saudi Aramco, Training and Career Development, Saudi Arabia
Hege Marie Norheim, Senior Vice President, Statoil, Norway

Round Tables:

RT11 - Implementing Human Rights in the oil and gas industry
The need to look for oil and gas reserves in increasingly more difficult frontiers led the industry to operate in regions plagued by civil wars, terrorism and social inequality. Some segments of society argue that, by investing in such regions, the oil industry is condoning governments and rulers that abuse human rights in various ways. Others claim that, on the other hand, that socially responsible companies may actually be a deterrent to human rights abuses and help mitigate the suffering of the population. This Round Table will discuss both points of view and address if and how companies should operate in such regions and how to implement the principles of Human Rights throughout their operations.

Moderator: Dr. Emmanuel Egbogah, SA to President Yar’dua on Petroleum Matters, Federal Government of Nigeria
Panel Members: Yousef Gavadi Nia Azari, Manager, NIOC, Iran

RT12 - Geopolitics and new frontiers
The petroleum business is interconnected, globalized and interdependent. Geopolitical issues can impact access to exploration in areas of territorial disputes or poor boundary demarcation zones (such as the Arctic, Spratleys, Gulf of Mexico, Gulf of Thailand), and can impact oil or gas supply and prices through disruption of transportation corridors, such as gas flow to Europe, Trans-Andean pipelines, Trans-Caucasus pipelines, piracy on high seas. Terrorism, military conflicts, resource nationalisation, global economy, disruption of funding and an unclear international legal framework are also major disruptors to the global energy flow. These geopolitical factors will be discussed from the prospective of business, government and academia.

Moderator: Pierre Alvarez, Vice President Corporate Relations, Nexen Inc., Canada
Panel Members: Carl Atallah, President, Chevron Qatar Limited, Qatar
Weidong Chen, EVP, CSO & Company Secretary, China Oilfield Services Limited, China
Didier Holleaux, Senior Vice President E&P, GDF SUEZ, France
Prof. Elena Telegina, Head, Department for Strategic Management, Gubkin Russian State University of Oil and Gas
RT13 - The changing role of National Oil Companies

The National Petroleum Council in the US has estimated that more than 60% of the world’s proven conventional oil reserves are held by NOC’s and more than half of the world’s top oil and gas producers are NOC’s or newly privatized NOC’s. This represents a dramatic evolution in the relationships between IOC’s and NOC’s. And potential concerns between national goals and shareholder goals. The International Energy Agency in its 2008 World Energy Outlook projects that NOC’s will account for more than 80% of required incremental oil and gas supply between 2007 and 2030. This Round Table discussion will explore the future roles and interactions of NOC’s and IOC’s and impacts on world oil and gas supply.

**Moderator:** Milton Costa Filho, General Manager, Petrobras (Mexico), Mexico

**Panel Members:**
- Armando Guedes Coelho, Board member of IBP, IBP, Brazil
- James D. McFarland, President and Chief Executive Officer, Vernex Energy Inc. Canada
- Marc Richard, Vice President/Business Development, Halliburton Corporation, UAE
- David Williams, Global Leader National Oil Companies, Deloitte & Touche (M.E.), UAE

RT14 - Geopolitics and Regulations on Climate Change

Climate change is one of the most urgent, and difficult issues facing civilisation. It is a global problem that directly affects every single citizen of every single nation. This creates an entanglement of interests unprecedented in history. If the problem of climate change is truly global, so too is the path to its solution. Solving this problem requires aligning the energy policies of over 150 nations. Any problem on this scale is bound to transcend traditional policy boundaries. In particular, climate change blurs, perhaps eliminates, the distinction between foreign and domestic policy. Energy, transport, housing, agriculture, and many other policy disciplines must now be treated as an integral part of foreign policy. The consequences of climate change will have such a profound effect on international affairs that they will come to shape the context within which diplomacy takes place.

**Moderator:** Sherri Stuewer, Vice President Environment Policy & Planning, Exxon Mobil Corporation, USA

**Panel Members:**
- Miguel Moyano, Projects Manager, ARPEL, Uruguay
- Beatriz Nassur Espinosa, HSE General Manager, Petrobas, Brazil
- Liv Monica Stubholt, Director, Aker ASA, Norway