

TECHNICAL BLOCKS & FORUMS

BLOCK 1: Transition in Exploration & Production

Forum 1 - New supply sources to meet global energy demand

With global energy demand expected to increase substantially in the next few decades the world will continue to need a wide range of energy sources. As current oil and gas resources deplete, new supply sources are needed including new basins, unconventional (oil sands, shale, tight oil and gas and gas hydrates) to meet continued oil and gas demand and provide feedstock for the production of blue hydrogen and rare gases in the transition to a lower carbon world.

Forum 2 - Innovations for cleaner production

The upstream sector is continuing to apply new technologies to achieve continuous improvement in minimising the environmental impact of its operations including those aimed at: reducing GHG and other emissions; reducing fresh water use; recycling and/or safe disposal of produced water; reducing spills; utilisation of waste heat; electrification; limiting operational footprints; and facilitating safe and timely abandonment of wells and facilities and reclaiming sites at the end of their useful life. This forum will showcase new technologies and other innovations being applied in both conventional and unconventional oil and gas operations to achieve cleaner production of oil and gas resources and lower environmental impact.

Forum 3 - Sustainable ways to maximise recovery

Upstream has been contributing to significant advancement of innovation and custodianship of the environment, maximising recovery while minimising the carbon footprint and overcoming continuous cost challenges. In this session, we will share advancements in technology innovation and digitalisation, subsurface modelling, best in class reserves management, water management, drilling and production technologies for IOR and EOR, while recognising climate challenges and the role of enhanced recovery in our transition to a low carbon future.

Forum 4 - Carbon capture and storage

As the petroleum industry works to reduce GHG emissions to net zero, one key tool at their disposal is Carbon Capture, Utilisation and Storage (CCUS). Capturing emissions can be done at their source, such as at large industrial facilities, or by removing CO₂ emissions directly from the atmosphere through Direct Air Capture (DAC), or through Nature Based Solutions. Once GHG's such as CO₂ are captured, they can be stored underground or utilised for other purposes. This forum will examine the current state of the CCUS industry, what is required for it to grow, and the nascent technologies that will deliver the large-scale growth of CCUS required to address global emissions.

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Forum 5 - New technologies in geoscience

Technology is changing the way we do business, and the geoscience industry is no different. The oil and gas industry has historically been at the forefront of applying new technologies due to their economic impact. Digital technology advances are rapidly altering the landscape of geoscience and the simultaneous emergence of access to large data sets and machine learning tools is and will continue to change the way we work. This session will illustrate the impact of new technologies on the way we work with geological data in the oil and gas industry today.

BLOCK 2: Transition in Refining, Petrochemicals & Products

Forum 6 - CO2 Utilisation and removal in products and processes

In many cases (e.g. in the field of mobility), the goal of a comprehensive reduction of CO2 emissions cannot only focus on the operating phase (fuel consumption), but must also take into account the manufacturing and subsequent dismantling phase. This results in the need for a multifaceted analysis of partly small-scale product flows and the associated processes. This forum will explore possible ways of capturing CO2 from processes, using it in closely coupled production paths which can be implemented in an economically justifiable manner, and the utilisation of CO2 by converting it into useful products.

Forum 7 - Emission reduction and recycling in refining & petrochemicals facilities

The world is in transition to a zero carbon society toward 2050, and the petroleum refining and petrochemical industries are no exception. For this reason, the petroleum and petrochemical industries must promote the reduction of carbon emissions from plants and the effective use of carbon more strongly than ever before. In this forum, we will discuss the latest information on not only emission reduction by developing new processes and high-performance catalysts, but also material/chemical carbon recycling such as recovery of emitted carbon, reuse of petrochemical products and fuel synthesis by FT and other processes.

Forum 8 - Cleaner fuels

In order to achieve climate targets it is necessary to manufacture new fuels with advances in utilisation technology and properties corresponding to them. This will include net zero carbon fuels that are offset by other carbon sinks. Biofuels, which have been attracting attention as carbon neutral fuels in recent years, should also be featured. In this forum, we will discuss the progress of utilisation technology, fuel properties and manufacturing technology required by new utilization technology, leading to net zero targets.

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Forum 9 - Innovation in products

The goal of further developing a circular economy requires a forward - looking determination of the underlying plastics and their compatibility with this goal in the case of plastic based and plastic-containing products. Also of growing importance for the future material spectrum will be possible recycling processes (e.g. pyrolysis, hydrogenation, etc) and the development of new polymers. The forum will address both aspects and how they will influence the future product spectrum of the petrochemical industry and their impact on the operation of refineries.

BLOCK 3 : Transition in Gas & Transportation

Forum 10 - Smart infrastructure

New strategies and technologies for transport and storage of natural gas will change the availability and affordability of gas, whilst reducing our carbon footprint. Infrastructure developments and integration for pipeline and LNG options are essential to ensure the efficiency of the system, reduce duplicity, diversify sources and increase competitiveness for producers, transit countries and consumers. Shorter term gas infrastructure and storage will play an instrumental role in the transition to new energy sources.

Forum 11 - Innovations in LNG & FLNG for the Energy Transition

Innovative developments in LNG and FLNG are helping to open up new frontiers and make gas more competitive, including its use as a transition fuel. Digitalisation allows for processes to become more efficient and enhanced communications with all customers across the entire value chain. LNG technology offers countries a more environmentally - sensitive way to develop natural gas resources. As demand increases for conventional uses of LNG, we also expect to see an increase in LNG - driven ships in the coming decade. IMO 2020 has placed a cap on sulphur emissions from ships, and due to low sulfur content requirements, LNG has been highlighted as a viable solution. This forum will look at the future prospects for FLNG development together with the increased use of LNG as a transition fuel.

Forum 12 - Towards zero methane emissions

This forum will focus on the ways towards zero methane emissions, including overview of the general pictures of global methane emissions from various sources, monitoring, treatment and prevention technologies, best practices, innovations and advanced technologies solutions such as; imaging, sensors, robotics, UAV, AI, among others, government regulations and industry roadmap.

Forum 13 - Hydrogen - emerging use, generation and distribution networks

The use of hydrogen in transportation and stationery power supply is free of on-board carbon emission and offers an alternative climate change solution. This forum will present use cases, efficient and innovative generation processes, distribution and transportation. The forum will also discuss production pathways comparing their environmental and economic impacts and demonstrate viable technology solutions for the distribution and storage challenges of the tiny molecules

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BLOCK 4: Leadership Challenges in Transition

Forum 14 - Safety & Risk management

Safety of the people, assets and environment has always been and will continue to be the focus of the industry. Assessment of all the risks and uncertainties and the development of practical strategies is necessary to ensure highest safety standards and risk minimisation and mitigation. Achieving those objectives are dependent on training, quality data and robust workflow processes and robust and reliable procedures in place to identify, evaluate and address the broad variety of risks inherent in the oil and gas industry. In this forum we will look at best practices, increasing adaptation of innovation in technology, and strategies as requirements for highest level of safety and successful risk management as part of a good governance.

Forum 15 - Cybersecurity

The industrial world is becoming more digitally connected, resulting in smarter and more productive operations. With the increasing amount of data, internet - connected devices and automation, cybersecurity is a higher priority than ever. Being the largest industry in the world, oil and gas companies are a major target for cyberattacks. No organisation, regardless of size or industry, is immune to cyberattacks, and just one breach could cause significant catastrophic/safety financial, reputational or regulatory consequences. So, today's oil and gas industry needs more innovative and efficient ways to maintain security. This session will present how the oil and gas industry maintains safety, efficiency and capitalises on innovative, cost saving technologies and big data without compromising security, operations and the environment.

Forum 16 - Future skills for an evolving workforce in the energy transition

The new requirements and challenges facing the oil and gas industry, have become a major challenge for managers and employees in the oil and gas industry. The energy transitions and new product trends, as well as evolving employee expectations, are prompting our industry to reimagine the make-up and performance of their workforces. Environmental responsibility, sensitivity to innovation and teamwork are coming to the forefront. The rapid development of technology dictates the need for new approaches to training and retraining, closer and more effective interaction between educational centers and the industry. The forum discusses some of the best practices and solutions to recruiting and retaining the best talent for the industry.

Forum 17 - Innovation & partnerships in supply chains

Sustainable, reliable, secure and cost effective supply of materials, equipment, technology and services is critical for the oil and gas industry. The greening of the supply chain can promote sustainability and transparency. Relationships between sustainability and value creation will be a key issue to be tackled over the long term resulting in new business relationships with demonstrable sustainable strategies. Sustainable procurement considers the whole life cost of goods through Life Cycle Assessment, to ensure it is economical in a comprehensive manner rather than basing decisions primarily on price, quality and time. The forum will also look at new local content policies which are being introduced in many countries adding complexity and creating new business models for the oil and gas industry to secure the supply of energy required for the next decades.

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