



23RD WORLD
PETROLEUM
CONGRESS
HOUSTON, USA
DEC 6-10, 2020

Innovative
Energy
Solutions

BLOCK 1 - Innovation in upstream

Securing the energy needs of tomorrow requires constant innovation in the upstream sector to maximise output from existing fields, find new petroleum resources and commercialize the world's large known, unconventional resources. Ongoing research and significant investments are needed to develop game-changing technologies to meet these supply challenges. With the drive for sustainability, and in the face of uncertain petroleum prices and fiscal regimes, the industry is focusing management of the business on operational efficiency, asset optimisation and financial returns while maintaining an overarching priority on safety and environmental performance. Innovations in the geosciences, drilling and completions, enhanced recovery, data management, emissions reductions and business processes will be showcased in this Block.

RT01 – JMF

Future of Unconventional Resources

Commercialization of the world's large, known unconventional petroleum resources including shale oil and gas, tight oil and gas, oil sands, oil shales and gas hydrates can provide a decisive contribution to offsetting natural declines in conventional resources, extending reserves life, facilitating further reductions in energy poverty and creating a bridge to an evolving lower carbon future. An international panel will address the size of the potential supply, innovative commercialization technologies, supply costs, public policy enablers and examples of ground-breaking projects and lessons learned.

RT02 – NT

Innovative Partnerships

Searching for and producing oil and gas is a complex task that requires technical know-how, but also significant financial investment – and a certain willingness to take risks. Therefore, joint ventures have long been common: Companies that are downstream competitors can form upstream partnerships. The oil industry is being affected by structural changes; the rise of shale, digitization, improved recovery and sustainability. In a complex world, no one can do everything well, and increasingly new technologies and solutions are developed in collaboration with companies inside and outside the energy sector, academia and governments; collaborating for innovation and competitiveness. In this roundtable the importance of such partnerships will be discussed.

RT03 - AAM

The Future Landscape of E&P Technology

Technological advancements, including those that form integral parts of the anticipated 4th industrial revolution, present unprecedented opportunities to the industry for optimizing its upstream operations toward realizing previously inconceivable improvements in discovery, recovery, production reliability, and associated economics. Yet, the development and eventual integration of such revolutionary technologies faces great challenges that need to be overcome through ambitious, focused and multidisciplinary R&D programmes. In this session, R&D leaders will share their view of the industry's future technology outlook and discuss key elements for revolutionizing the E&P technology landscape, including examples of current efforts and initiatives.



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BLOCK 2 - Innovation in downstream & petrochemicals

With accelerated changes in engine technologies and public carbon policies on the consumer side, paralleled with the shifts in crude slate on the producer side, the downstream landscape is in transition. Improving efficiency of existing assets continues to be a major focus area, while downstream players need to grow new competencies in product and market development to find their new customers and sustain long-term profitability. Beyond addressing innovative technologies, improved resilience and the growing role of mid-stream in today's refining envelope, this Block will encompass opportunities in shifting molecules to explore emerging operational and business models reaching into the chemicals value chain.

RT04 - AT

Delivering large-scale downstream projects

Hydrocarbon processing and petrochemical production are capital intensive industries. Sustained success of companies is driven by multiple year, large and mega-scale capital projects involving diverse players. Project executives in different geographies need to cooperate to deliver results in a world of rapidly evolving manufacturing technologies and changing contractor market. This roundtable dialogue will develop responses on how innovative project formats, risk management tools, emerging management and leadership practices will shape timely, in-scope, on-budget project completions.

RT05 - UY

How to ensure Asset Integrity in a Digital World

Not just for process control, digital technology has increasingly been utilized for a wide range of purposes including closing the generation gap between operators, RBM/RBI and simultaneous management of several facilities, with technological progress such as artificial intelligence and the internet of things and big data utilization. It has become an effective tool for asset management. This roundtable will consider how digital technology is currently utilized for asset integrity. What are its advantages and disadvantages? What could the ideal model of digital technology for future asset integrity look like? And what will encourage or hinder the realization of the ideal model?

RT06 - SR

The Future of the Retail Business Model

Alternative energies, mobility transformations and digitalization are changing and enabling the oil and gas retail ecosystem. The oil and gas companies and retailers should anticipate these transformations and strategize around the business models of the filling stations. Higher integration – including mobility services and digital platforms -, diversification of the services, optimized footprint, branding and a consumer-centered approach are among the key levers to understand the evolution of the profit pool and draw the lines of the service station of the future.



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BLOCK 3 - Innovation in natural gas

Natural gas will remain an essential part of the future energy mix during the energy transition, readily available for countries throughout the world. It is the cleanest-burning hydrocarbon and supply can typically respond quickly to changes in demand. This Block covers a variety of innovation challenges and opportunities around natural gas including future supply and demand scenarios, its role as a transition fuel, innovative technologies and processes for gas exploration and production, as well as transport, infrastructure and storage challenges.

RT07 - LY

Routes to Market

Natural gas has proven to be a reliable and growing transition fuel. The issue is the most efficient way to market. Is this via pipeline or LNG. How does geopolitics, free trade market environments and environmental requirements frame the future routes to market.

RT08 - GR

Impact of Digitalisation on the Gas Network

Digitalized energy systems in the future may be able to identify who needs energy and deliver it at the right time, to the right place and at the lowest cost. By taking advantage of digitalisation, gas network operators will realize improvements in integrity, safety, compliance and operational efficiency. Deployment of emerging technologies, such as big data analytics, wearable computer and safety devices, innovative leak detection tools and drones, will provide faster problem resolution and help network operators to be more effective with limited resources.

RT09 – DT

The Global Natural Gas market

Natural gas is becoming an essential part of the energy mix for countries throughout the world, with LNG having an increasingly important role to connect the main regional markets into a global one. The evolution of those markets will rely on the development of new interconnections, storage facilities and LNG plants, as well as regulation. New players, price mechanisms and contract terms are also changing the natural gas market dynamics. This roundtable will focus on identifying and analysing the impact of this evolution and how the key players in production, marketing and demand will face the new challenges in a global natural gas market.



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BLOCK 4 - Future energy landscape

The global shift towards a low-carbon, circular economy has started, and its pace is accelerating, with international regulations driving the process towards lower emissions and greater efficiencies in the energy transition. As cities and countries across the world adopt new models for living, commerce, transportation and industry, the oil and gas sector needs to look at innovative ways to reduce the carbon footprint in their operations and their products. Technology, policies and investment will all determine the way forward to supplying the modern energy of tomorrow.

RT10 - LY provided by PMS/TG

Approaches to implementing climate change policies

The Paris Agreement highlighted the commitment of society in fighting against climate change. It is a serious issue that requires the implementation of effective global policies to be adopted. Everyone should take responsibility to meet global climate goals, and to promote collaboration between companies and governments to achieve a clear and stable regulatory framework. This roundtable will address how companies deal with national and international policies, covering initiatives to reduce emissions or advances in technology to improve energy efficiency among others.

RT11 - GR

Energy Mix of the Future

All energy forecasts predict a future energy mix in which oil and gas play a less dominant role with greater contribution of the energy from renewable sources. Oil demand is expected to continue dominating key sectors such as transportation and chemicals with gradual replacement by gas. In response to these challenges, many policy-makers are looking for energy transitions to add more low-carbon and renewable sources to the energy mix. How do businesses and governments see the energy mix in the near future. How is the energy sector being transformed and what are the impacts of renewable energy developments?

RT12 – PB

How does Geo-Politics impact future energy developments?

The future geopolitical risks will arise from the tensions between suppliers and consumers. We have witnessed the change of the main producing regions of the world over the last decade. The United States has become a leading producer and the shale revolution in the US has brought us a new element on the global market. How will that affect traditional producers? How does the industry manage through sanctions, trade wars, unrest and political change?



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BLOCK 5 - Managing energy solutions

Our industry faces numerous challenges, and it will be our spirit of innovation that will deliver solutions. With its global footprint, the oil and gas sector face multiple operational risks that need to be managed. Increasingly today, societal expectations play a leading role and we must be ever conscious of the public, and how we are perceived. Our licence to operate requires that we bring affordable energy to communities around the world and accelerate energy access to those most in need. To deliver on these goals we need to ensure, that we encourage and develop the practical skills necessary within our industry.

RT13 - KO

Data Sharing / Cybersecurity

Being the largest industry in the world, oil and gas companies represent a big part of the global economy and are therefore huge targets for cyberattacks. The industrial world is becoming more digitally connected, resulting in smarter and more productive operations, and with the increasing amount of data, internet-connected devices and automation, cybersecurity is a higher priority than ever. No organization, regardless of size or industry, is immune to cyberattacks, and just one breach could cause significant financial, reputational or regulatory consequences. So, today's oil and gas industry need more innovative and efficient ways to maintain security. This session will present how the oil and gas industry maintains efficiency and capitalizes on innovative, cost-saving technologies – big data – without compromising security or operations.

RT14 - AD

Financing Energy Solutions

Investment in the oil and gas industry is at cross-roads. Considering the population growth projections provided by the United Nations, the type of future energy demand and alternate sources of energy are all increasing the uncertainty regarding direct future investments. The low oil price environment seen in the last few years led to a significant drop in investments across the sector and raised concerns from banks and shareholders regarding the sustainability of the traditional business model. This roundtable will explore the opportunities and challenges the industry faces to depend on its own balance sheet, in addition to discussing other innovative financial structures.

RT15 – AT with input from PB & GM

New Oil & Gas Manager's Role in an era of energy innovation

Petroleum upstream and downstream companies are large scale, multi-layered organizations with activities in diverse, competencies, geographies and cultures. Furthermore, oil and gas companies are entering an era where energy innovation and carbon emissions are key issues to be mastered. The diffusion of smart energy systems and the large implementation of connected devices in upstream and downstream sector transforms the role and the competences of managers to succeed in oil and gas companies. With the expected changes in stakeholders' preferences, oil companies need to adapt their business models. This Round Table will discuss the skills and requirements that future managers and employees will need to achieve