# TABLE OF CONTENTS

## BLOCK 1: INNOVATION IN UPSTREAM

<table>
<thead>
<tr>
<th>FORUMS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01 INNOVATIVE E&amp;P TECHNOLOGIES</td>
<td>4</td>
</tr>
<tr>
<td>F02 MANAGING MATURE FIELDS</td>
<td>7</td>
</tr>
<tr>
<td>F03 NEW PETROLEUM RESOURCES</td>
<td>10</td>
</tr>
<tr>
<td>F04 IMPACT OF DIGITALIZATION IN THE UPSTREAM SECTOR</td>
<td>13</td>
</tr>
<tr>
<td>F05 IMPROVING INDUSTRY PERFORMANCE</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ROUND TABLES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT01 FUTURE OF UNCONVENTIONAL RESOURCES</td>
<td>18</td>
</tr>
<tr>
<td>RT02 INNOVATIVE PARTNERSHIPS</td>
<td>19</td>
</tr>
<tr>
<td>RT03 THE FUTURE LANDSCAPE OF E&amp;P TECHNOLOGY</td>
<td>19</td>
</tr>
</tbody>
</table>

## BLOCK 2: INNOVATION IN DOWNSTREAM & PETROCHEMICALS

<table>
<thead>
<tr>
<th>FORUMS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>F06 INNOVATIVE REFINING TECHNOLOGIES</td>
<td>20</td>
</tr>
<tr>
<td>F07 RESILIENT REFINING</td>
<td>23</td>
</tr>
<tr>
<td>F08 CHEMICALS ON THE RISE</td>
<td>25</td>
</tr>
<tr>
<td>F09 INTEGRATION OF REFINING AND PETROCHEMICALS</td>
<td>28</td>
</tr>
<tr>
<td>F10 GROWING VALUE IN MIDSTREAM</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ROUND TABLES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT04 DELIVERING LARGE-SCALE DOWNSTREAM PROJECTS</td>
<td>32</td>
</tr>
<tr>
<td>RT05 HOW TO ENSURE ASSET INTEGRITY IN A DIGITAL WORLD</td>
<td>33</td>
</tr>
<tr>
<td>RT06 THE FUTURE OF THE RETAIL BUSINESS MODEL</td>
<td>33</td>
</tr>
</tbody>
</table>

## BLOCK 3: INNOVATION IN NATURAL GAS

<table>
<thead>
<tr>
<th>FORUMS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>F11 TRANSPORT, INFRASTRUCTURE AND STORAGE OF NATURAL GAS</td>
<td>34</td>
</tr>
<tr>
<td>F12 NATURAL GAS AND LNG PROSPECTS</td>
<td>37</td>
</tr>
<tr>
<td>F13 GAS AS A TRANSITION FUEL</td>
<td>38</td>
</tr>
<tr>
<td>F14 TECHNOLOGY INNOVATION IN MID- AND DOWNSTREAM GAS</td>
<td>40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ROUND TABLES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT07 ROUTES TO MARKET</td>
<td>43</td>
</tr>
<tr>
<td>RT08 IMPACT OF DIGITALIZATION ON THE GAS NETWORK</td>
<td>44</td>
</tr>
<tr>
<td>RT09 THE GLOBAL NATURAL GAS MARKET</td>
<td>44</td>
</tr>
</tbody>
</table>
BLOCK 4: FUTURE ENERGY LANDSCAPE

FORUMS
F15 LOW CARBON TECHNOLOGIES AND STRATEGIES FOR OIL & GAS ............... 45
F16 LOW CARBON ENERGY OPTIONS: THE FUTURE OF RENEWABLES AND ALTERNATIVE ENERGIES ......................................................... 48
F17 REGULATORY AND POLICY DRIVERS ......................................................... 51
F18 TRANSPORTATION ENERGY OF THE FUTURE ............................................ 53

ROUND TABLES
RT10 APPROACHES TO IMPLEMENTING CLIMATE CHANGE POLICIES ............ 56
RT11 HOW DOES GEO-POLITICS IMPACT FUTURE ENERGY DEVELOPMENTS? .... 57
RT12 ENERGY MIX OF THE FUTURE ................................................................. 57

BLOCK 5: MANAGING ENERGY SOLUTIONS

FORUMS
F19 RISK MANAGEMENT ................................................................................. 58
F20 ACCELERATING ENERGY ACCESS .............................................................. 61
F21 DIGITALIZATION OF THE PETROLEUM INDUSTRY: OPPORTUNITIES AND IMPACTS ................................................................. 63
F22 IMPROVING THE PUBLIC PERCEPTION OF THE OIL AND GAS INDUSTRY .... 65
F23 COMPETENCIES AND SKILLS FOR INNOVATIVE ENERGY SOLUTIONS .... 68

ROUND TABLE
RT13 DATA SHARING / CYBERSECURITY ...................................................... 70
RT14 FINANCING ENERGY SOLUTIONS ........................................................... 70
RT15 NEW OIL & GAS MANAGER’S ROLE IN AN ERA OF ENERGY INNOVATION .... 71
Securing the energy needs of tomorrow requires constant innovation in the upstream sector to maximize 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 optimization 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.

**F01 – INNOVATIVE E&P TECHNOLOGIES**

Monday, December 7, 2020 | 14:15 – 15:45

Innovation and new technologies enable a more efficient and cost-effective oil and gas industry and help tackle both technical complexities as well as lower emission intensities. Technology drives almost every aspect in our upstream business from reservoir to point of sale. This forum will address the role of new technologies and innovative breakthroughs in geosciences, production and development to overcome future challenges in finding, exploiting and commercializing increasingly cleaner energy sources.
Chair: **Jayme Meier**, Vice President, Engineering, ExxonMobil Upstream Research Company, USA

Vice Chairs: **Dr. Ashraf Tahini**, Director, Aramco R&D Global Centers at the United States, Saudi Aramco, Saudi Arabia
**Orlando Ribeiro**, Executive Manager of R&D, Petrobras, Brazil

---

### F01 – PAPERS

**Planet Imaging R&D, Pioneering Geophysics and Satellite Technologies to Discover and Produce a Responsible Energy**

*Florent Bertini*, RD Program Director, TOTAL E&P, France

**Deep Learning Based Production Flow Profiling and Allocation Using Fiber Optic DAS and DTS Data**

*Dr. Weichang Li*, AI Team Lead, Aramco Services Company, USA
Co-author: **Frode Hveding**, Saudi Aramco, Saudi Arabia

**Enabling Long Distance Subsea Processing with the World's First Subsea Power Grid**

*Atle Stromme*, Executive Vice President and Deputy CEO, Siemens, Norway

**A Deep Dive into Disruptive Technologies in the Oil and Gas Industry**

*Hossein Rokhsari Azar*, CEO, Darcy Partners, USA
Co-author: **Maziar Pashaei Rad**, University of Houston, USA

---

### F01 – POSTERS

**Dispersed Source Array Seismic Acquisition: Increasing the Quality of Seismic Data**

*Dr. Abdulrahman Alshuhail*, Geophysicist, Saudi Aramco, Saudi Arabia
Co-authors: **Constantinos Tsingas**, Saudi Aramco, Saudi Arabia
**Mohammed Al Mubarak**, Saudi Aramco, Saudi Arabia

**Managed Pressure Drilling Avoids Losses to Reach Total Depth in Challenging Pre-salt Formation**

*Peter Dugas*, Applications Engineer, Weatherford, USA
Co-authors: **Richard Wilson**, Weatherford, USA
**Maurizio Arnone**, Weatherford, USA
Reservoir Connectivity Assessment Using New Formation Testing Platform Indicates Connectivity Across Large Reservoir Offshore Mexico

Joel Speights, Reservoir Engineer Manager – Mexico, Talos Energy, USA

Co-authors:  Francois Dubost, Schlumberger, Mexico
              Oliver Mullins, Schlumberger, USA

Innovation and Application of Seismic Technology to Complex Strike-slip Fault Areas in Southern Turgai Basin

Dr. Chen Xin, Chief Geologist, BGP, China

Co-authors:  Zhao Yuguang, BGP CNPC, China
              Wang Zhaofeng, CNODC CNPC, China
              Wei Xiaodong, BGP CNPC, China
              Liu Hongwei, CNODC CNPC, China
              Gang Chen, BGP CNPC, China
              Yang Ke, BGP CNPC, China
              Li Qiang, BGP CNPC, China

Maximizing Lifecycle Value for Deepwater Assets by Holistic Flow Assurance Engagement

Dr. Tabish Maqbool, Flow Assurance Engineer, ExxonMobil Upstream Research Company, USA

Co-authors:  Scott Hickman, ExxonMobil Upstream Research Company, USA
              Todd Lagus, ExxonMobil Upstream Research Company, USA
              Giovanni Grasso, ExxonMobil Upstream Research Company, USA
              Joseph Lederhos, ExxonMobil Upstream Research Company, USA

Experimental Salt Cavern for Carbon Capture and Storage in Offshore Ultra-deep Water in Brazil

Dr. Alvaro Maia da Costa, Director, Modecom Technology in Geomechanics and Computing Modeling, Brazil

Co-authors:  Pedro V. M. Costa, Modecom Technology in Geomechanics and Computing Modeling, Brazil
              Antonio C. O. Miranda, University of Brasilia, Brazil
              Mariana B. R. Goulart, University of São Paulo, Brazil
              Andre Bergsten, University of São Paulo, Brazil
              Nelson F. F. Ebecen, Federal University of Rio de Janeiro, Brazil
              Julio R. Meneghini, University of São Paulo, Brazil
              Kazuo Nishimoto, University of São Paulo, Brazil
              Camila Brandão, Shell Brazil, Brazil
              Alexandre Breda, Shell Brazil, Brazil
Potential Environmental Impact of Nanotechnology During Hydrocarbon Deposits Exploration and Exploitation

Ewa Kukulska-Zajac, Department Manager, Oil and Gas Institute National Research Institute, Poland

Co-authors: Anna Krol, Oil and Gas Institute – National Research Institute, Poland
Monika Gajec, Oil and Gas Institute – National Research Institute, Poland

Clean Fleet Electric Fracturing

Jared Oehring, Chief Technology Officer, US Well Services, USA

Pore-scale Modeling and Simulation of Unconventional Reservoirs Using Lattice-Boltzmann Method

Cenk Temizel, Sr. Reservoir Engineer, Saudi Aramco, Saudi Arabia

A New Method of Reservoir Stimulation: Self-Propping Fracturing Technology

Dr. Yuxin Pei, Postdoctoral Researcher, PetroChina Dagang Oilfield Company, China

Co-authors: Dongping Li, PetroChina Dagang Oilfield Company, China
Huaxing Zhou, PetroChina Dagang Oilfield Company, China
Liqiang Zhao, Southwest Petroleum University, China
Shengchuan Zhang, PetroChina Dagang Oilfield Company, China
Xingsong Liao, PetroChina Dagang Oilfield Company, China

F02 – MANAGING MATURE FIELDS

Tuesday, December 8, 2020 | 14:15 – 15:45

Mature oil and gas fields are the core assets of oil companies and a leading contributor to the world's energy supply. To maintain effective development, technology innovation and reservoir management are of great importance. This forum will discuss IOR/EOR technology innovation and best practices learned in reservoir management, as well as well abandonment/facility decommissioning in both onshore and offshore operations.

Chair: Dr. Mike Watts, Managing Director, Pharos Energy, UK
Vice Chairs: Farida Ali, Manager Reservoir Management Group, Kuwait Oil Company, Kuwait
Jing Xudong, Manager Shell Technology Oman at Shell, Shell Development Oman LLC, Netherlands
Research and Practice of Chemical Flooding on Offshore Heavy Oilfield in Bohai Bay of China

Li Yanlai, Senior Engineer, CNOOC, China

Co-authors: Su Yanchun, CNOOC, China
Yang Wei, CNOOC, China
Meng Peng, CNOOC, China
Wang Lilei, CNOOC, China

Study of Enhancing Stimulation & Maximizing Hydrocarbon Recovery from a Deep Heterogeneous Sub-Hydrostatic Carbonate Reservoir

Talal Almutary, Production Engineer, Saudi Aramco, Saudi Arabia

Co-authors: Naresh Purusharthya, Saudi Aramco, Saudi Arabia
Abdul Muqtadir Khan, Schlumberger, Saudi Arabia
Mohamed ElSebaee, Schlumberger, Saudi Arabia

Canadian Thermal in Situ — A Sustainable Source of Global Energy

Nathan Kupsch, General Manager In Situ Resources, Suncor Energy Inc, Canada

The Role of Enhanced Oil Recovery Methods in Revitalizing Mature Oilfields of Tatarstan

Ilnur Mukhliev, Deputy Head of Well Intervention Centre, PJSC Tatneft, Russia

Co-author: Marat Mannapov, PJSC Tatneft, Russia

The Troll Story: How Innovation Created One of the Largest Oil Fields Offshore Norway

Ingvild Lygren, Vice President Petroleum Technology, Equinor ASA, Norway

The Innovation Effects of Horizontal Wells and Seismic on the Performance of Fractured Gas Reservoirs

Dr. Vali Ahmad Sajjadian, Management of Upstream Projects, Masjed Soleyman Bakhtiari Petrochemical Refinery, Iran

Co-author: Zahra Ghazbani, Kharg Azad University, Iran

Study on Air Foam Driving Test in Ultra-low Permeability Reservoir

Guangming Yu, Deputy Director, Changqing Oil Field Company Exploration and Development Institute, China
Mitigate Asphaltene Deposition Challenge in Deep Jurassic Wells — A Comprehensive Overview

Abdulaziz Abbas, Petroleum Engineer, Kuwait Oil Company, Kuwait

Co-authors: Jose Peres, Kuwait Oil Company, India
Noura Alkhedhair, Kuwait Oil Company, Kuwait

Increasing of Oil Recovery Factor on Mature Fields by Infill Drilling of Wells

Marat Mannapov, Deputy Head of Subsoil Use Department, PJSC Tatneft, Russia

Co-author: Ilnur Mukhliev, PJSC Tatneft, Russia

Effective Well Integrity Management for a Matured Sour Oil Field — An Engineer’s Perspective

Surajit Haldar, Production Engineer Specialist, Saudi Aramco, Saudi Arabia

Co-author: Fahmi Aulia, Saudi Aramco, Saudi Arabia

Thorough Analysis of Integrated Surface Network System and Produced Water Management in Mature Oil Field

Iyon Maryono, Petroleum Engineer, Saudi Aramco, Saudi Arabia

Co-authors: Sanjiv Kumar, Saudi Aramco, Saudi Arabia
Fehead M. Al-Subaie, Saudi Aramco, Saudi Arabia
Aqeel M. Bahrani, Saudi Aramco, Saudi Arabia

Multi-physics Integrated Workflow to Estimate Stresses in the Gulf of Mexico Deep Water Wells

Samer Alatrach, Geo-mechanics Domain Champion, Schlumberger, USA

Co-authors: Allan Reyes, Schlumberger, USA
Vinay Mishra, Schlumberger, USA
Anish Kumar, Schlumberger, USA

Evaluation of Chemically Modified Starch as Viscosifying Agent to Enhanced Oil Recovery

Kelly Lúcia Nazareth Pinho de Aguiar, Doctoral Student, Eloisa Mano Macromolecule Institute of Federal University of Rio de Janeiro, Brazil

Co-authors: Luiz Carlos Magalhães Palermo, Federal University of Rio de Janeiro, Brazil
Claudia Regina Elias Mansur, Federal University of Rio de Janeiro, Brazil
Karen Sá Gomes, Federal University of Rio de Janeiro, Brazil
Matheus Ferreira da Silva Licht, Federal University of Rio de Janeiro, Brazil
Recent Progress in the Field Practice of Chemical Enhanced Oil Recovery Technologies in China

Youyi Zhu, Professor, PetroChina, China

New Reserve Development Opportunity in Shallow Low Perm Carbonates in Northern Mexico Through Propped Fracture

Silvano D'Alessio, Geology Coordinator, DEP Petroleo y Gas, Mexico
Co-authors: Alberto Ochoa, DEP Petroleo y Gas, Mexico
Luis Zagaglia, DEP Petroleo y Gas, Mexico

F03 – NEW PETROLEUM RESOURCES

Tuesday, December 8, 2020 | 16:00 – 17:30

As production from discovered petroleum resources continues to decline naturally, enormous capital is being invested in the hunt for new sources of petroleum supply to meet continued growth in demand, while continuing to transition to a lower-carbon future. This hunt increasingly relies on innovative technologies to cost-effectively pursue conventional petroleum resources in new remote basins and ever deeper offshore areas and to unlock the huge latent potential of unconventional resources such as shale oil and gas, tight oil and gas, oil sands and gas hydrates, in an environmentally responsible and socially acceptable way. This forum will describe innovative technologies and processes that are critical drivers for the continued growth of petroleum supply.

Chair: Christophe Amadeï, VP Unconventional Development, Total E&P, France
Vice Chairs: Benjamin Sloan, Manager, Resources to Reserves, Chevron, USA
Khalid Al Abdul Qader, General Manger, Unconventional Resources, Saudi Aramco, Saudi Arabia

F03 - PAPERS

The Hunt for the 100 Billion BOE Resource in the Pre-salt, Santos Basin, Brazil

Dr. Marcio Mello, President, Flowmagic Technology Ltda, Brazil
New Hydrocarbon Reservoir Sweet Spot Identifier Enabling Optimal Field Development Plans

Dr. Ghazi AlQahtani, Advance Simulation Modeling Specialist and Group Leader, Saudi Aramco, Saudi Arabia

Co-authors: Menhal Ismail, Saudi Aramco, Saudi Arabia
Abdulhamed Faleh, Saudi Aramco, Saudi Arabia
Basharat Ali, Saudi Aramco, UK
Fouad Abouheit, Saudi Aramco, USA

Big Data-driven Advanced Analytics: Application of Convolutional and Deep Neural Networks for Seismic Interpretation

Sergey Alyamkin, Chief Data Scientist, AlphaX Decision Sciences, USA

Co-author: Sammy Haroon, AlphaX Decision Sciences, USA

Strategic Vision for Lacustrine Shale Oil Revolution in China

Dr. Zhijun Jin, Member of Chinese Academy of Sciences, Sinopec, China

Co-authors: Maowen Li, Sinopec E P Research Institute, China
Xunyu Cai, Sinopec Upstream Company, China
Mingshui Song, Sinopec Shengli Oilfield Company, China
Jizheng Yi, Sinopec Jianghan Oilfield Company, China

Challenges and Opportunities for the Development of Shale Gas in Indonesia

Josia Simanjuntak, Project Management Officer, SKK Migas, Indonesia

Co-authors: William Fisher, The University of Texas at Austin, USA
Svetlana Ikonnikova, Bureau of Economic Geology UT Austin, USA

Unconventional Petroleum Basement Reservoirs: A Case Study of the Sab’atayn Basin of Yemen

Aref Lashin, Professor, King Saud University, Saudi Arabia

Co-author: Waleed Bawazer, King Saud University, Yemen

Hail the Shale — How Shall India Embrace Shale Gas?

Saurabh Agarwala, Senior Manager, Engineers India Ltd, India

Co-author: Vartika Shukla, Engineers India Ltd, India
A New Way of Staged Fracturing: Cluster-by-Cluster and Isolated with Proppants Instead of Bridge Plugs

Dr. Junlong Li, Director, Downhole Service Company of Chuanqing Drilling Engineering Company of CNPC, China

Co-authors: Xiaozhi Shi, Downhole Service Company of Chuanqing Drilling Engineering Company of CNPC, China  
Juhui Zhu, Downhole Service Company of Chuanqing Drilling Engineering Company of CNPC, China

The Modified Pyrolytic Production Index for Identifying Oil-saturated Interval in Shale Formation

Thi Nhut Suong Le, Student, Gubkin Russian State University of Oil and Gas, Russia

Limits on Production-induced Interference Testing in Diagnosis of Optimal Well Spacing in Shale Plays

Clay Kurison, Geo-Scientist, Saudi Aramco, Saudi Arabia

Co-authors: Ahmed H. Mubarak, Saudi Aramco EUAD, Saudi Arabia  
Ahmed M. Hakami, Saudi Aramco EUAD, Saudi Arabia  
Fataierge O. Ahmed, Saudi Aramco EUAD, Saudi Arabia

Non-equilibrium Molecular Dynamics Simulation of Pore Structure of Kerogen with Different Maturity

Yu Yang, China, PetroChina, China

Co-authors: Nong Li, PetroChina, China  
JiaHuan He, PetroChina, China  
HongBin Chen, PetroChina, China  
DongBo Wang, SiChuan University, China

Non-equilibrium Molecular Dynamics Simulation of Methane Molecular Adsorption-desorption Mechanism in Shale of Sichuan Basin

Changhong Cai, Leader, PetroChina, China

Co-authors: Nong Li, PetroChina, China  
Dan Zhao, PetroChina, China  
Lin Wang, Sichuan University, China  
HongBin Chen, PetroChina, China
Fine Characterization of Multi-Scale Natural Fractures for Saline Lacustrine Shale Reservoirs in the Qaidam Basin

Qinghui Zhang, Section Chief, PetroChina Qinghai Oilfield Company, China

Study on the Influence of Lithology of Longmaxi Formation Shale on Acoustic Wave Propagation Velocity

Dan Zhao, Engineer, PetroChina, China

Co-authors: Nong Li, PetroChina, China
Dan Zhao, PetroChina, China
Changhong Cai, PetroChina, China
Wei Zhang, PetroChina, China
Juedong An, PetroChina, China
Hongbin Chen, PetroChina, China

F04 – IMPACT OF DIGITALIZATION IN THE UPSTREAM SECTOR

Wednesday, December 9, 2020 | 14:15 – 15:45

Digital technologies are a growing technology focus area, such as AI, robotics, remote monitoring, and advanced analytics, and essential to solving today’s energy challenges and driving efficiency in all aspects of the upstream business. Digitalization helps reduce operational costs through increased worker productivity with mobility, driving operational excellence and subsurface data management for the oil and gas industry. Upstream companies need to stay ahead in the digital revolution, developing in-house capabilities and adding external talent for data analytics and other leading technologies. The forum will look at best practices and innovations in the industry.

Chair: Dariusz Piotrowski, Director, Cognitive & AI Solutions Development, Natural Resources Team, IBM, UK

Vice Chairs: Masatoshi Nishi, Leader, INPEX Digital Transformation Task Force, INPEX Corporation, Japan
Dr. Nikolai Eremin, Deputy Director, Oil & Gas Research Institute of the Russian Academy of Sciences (OGRI RAS), Russia
Machine Learning Models for Porosity Using Elastic Properties from Well Logs Applied to Pre-salt Carbonates

Carlos Menezes, System Engineer, PETREC, Brazil

Co-authors: Joao Ralha, PETREC, Brazil
Inacio Borges, PETREC, Brazil
Luciana Brelaz, PETREC, Brazil
Alyne Duarte, PETREC, Brazil
Josias Silva, PETREC, Brazil

Real-time Data Driven Hydrocarbon Production Optimization — Digital Twin Model Addressing the Entire Value Chain

Skip Davis, Principal, Siemens, USA

Advanced Optimization of Non-Conventional Upstream Plant Production

Tracey Solomons, Associate Partner Advanced Analytics, IBM, Canada

Co-author: Jayant Kalagnanam, IBM, Canada

Implementation of Autonomous Ground Robots on Operational Sites

Eric Bartoli, New Generation Facilities Operation Manager, TOTAL, France

Holistic Approach of Digital Data Enabling Reservoir Management Analysis

Abdel Nasser Abitrabi, Consultant, Saudi Aramco, Saudi Arabia

Co-author: Amer Abuhassoun, Saudi Aramco, Saudi Arabia

Integrating Ensemble-based Workflows for Optimized Production Forecasting

Manuel Arroyo, Upstream Oil and Gas Programs Manager, Emerson Automation Solutions, USA

Co-author: Usman Aslam, Emerson Automation Solutions, USA

Real-time Monitoring and Control of Logging Operations Leveraging Data Virtualization, Visualization, and Workflow Orchestration

Hani Elshahawi, Digitalization Lead - Deepwater Technology, Shell, USA
Integrated Digital Twin Implementation - Abqaiq GOSP-3 (IR 4.0)

**Peer M Shiffli**, PLNG Analysis Spec, Saudi Aramco, Saudi Arabia

Co-authors: **Hani AlKhalifa**, Saudi Aramco, Saudi Arabia
**Rohit Aswani**, Saudi Aramco, Saudi Arabia
**Abdulaziz Alzahrany**, Saudi Aramco, Saudi Arabia

Ariel: Autonomous Robot for Identification of Emulsified Liquids

**Dr. Marcelo Andreotti**, Senior Research Engineer, Repsol Sinopec Brazil, Brazil

Non Conformance Report Manager

**Hamad AlGhanim**, Systems Analyst, Kuwait Oil Company, Kuwait

Digitalization of Asset Performance Management in Qatargas

**Hasnaa Al-Qahtani**, Reliability Engineering Lead, Qatargas, Qatar

The Importance of the Use of Unmanned Aerial Vehicles in the Oil and Gas Industry

**Taha Enes Kon**, Procurement Engineer, Turkish Petroleum Cooperation, Turkey

Co-authors: **Merve Akkoc**, Thomas Jefferson University, USA
**Ajmal Yousuff**, Drexel University, USA
**Gokhan Benk**, Auburn University, USA

Research and Application of Dynamic Monitoring Technology Applied in Separate Injection Wells in Digital Oilfield

**Yang Lingzhi**, Oil and Gas Technology Research Institute Changqing Oilfield Company, China

Co-authors: **Liu Yanqing**, Oil and Gas Technology Research Institute Changqing Oilfield Company, China
**Yu Jiuzheng**, Oil and Gas Technology Research Institute Changqing Oilfield Company, China
**Yao Bin**, Oil and Gas Technology Research Institute Changqing Oilfield Company, China

The Human Element in Digital Transformation — The Softer, Often Forgotten Perspective

**Gillian Tilbury**, Managing Director, The Carnrite Group, USA
Economic uncertainties coupled with growing technical complexities mandate our industry to improve performance, optimize costs, and reduce risks. From design to contracting and from financing to execution, partnerships must evolve toward better alignment, integration, and collaboration. Unique partnerships with regulatory bodies in terms of fiscal regimes and administrative design can encourage exploration and development of increasingly complex resources while improving performance. Adoption and integration of revolutionary technologies—such as blockchains, and the internet-of-things—provide further means to realize an improved performance. This forum will include presentations that demonstrate the value of such practices.

Chair: **Yuxiang Wei**, Vice President, CNPC Central Asia and General Director, CNPC Kazakhstan B.V., CNPC Central Asia, China

Vice Chairs: **D.Sc. Augusto Borella**, General Manager - Strategy, Organization and Management System, Petrobras, Brazil

**Andrey Belevtsev**, Director of Digital Transformation, Gazprom Neft, Russia

### F05 - PAPERS

**How Collaborative Innovation is Accelerating the Environmental Performance Improvement of Canada’s Oil Sands**

**Wes Jickling**, Chief Executive, Canada’s Oil Sands Innovation Alliance, Canada

** Tradespace Exploration for Offshore Oil & Gas Developments — A Model-Based Systems Engineering Approach**

**Anderson Leocadio da Nova**, Project Engineer, Repsol Sinopec Brazil, Brazil

**The Effect of Applying a Systematic Innovation Program on Already Established Operation Facility**

**Mohammed Farran**, Main Engineer, Aramco, Saudi Arabia
Qatargas Subsurface Integrated Data Portal — The Key to Subsurface Informed Decisions

Saheena Najeeb, Subsurface Data Specialist, Qatargas Operating Company Ltd, Qatar

Predicting the Probability of Persistent Profit

Dr. Tobias Hoeink, Sr Director Stimulation Software & AI, Baker Hughes, USA

F05 - POSTERS

AI Digital Twin Technology

Rosana Ellis, COO, PhDsoft Technology Inc, USA

Co-author: Duperron Ribeiro, PhDsoft Technology Inc, Brazil

Improving Plant Safety & Performance by Adopting & Adapting Revolutionary Technologies

Mostafa ElBaradie, Engineering Consultant, Saudi Aramco, Saudi Arabia

Cross-functional Communication in a Project Aimed to the Efficient Development of Residual Oil Resources Field

Vasil Gimazetdinov, Drilling Engineer, Gazpromneft STC, Russia

Integrate Facilities with Reservoir Resources to Make the Marginal Oilfield Fruitful Under Oil Price Winter

Hongfu Shi, Reservior Engineer, CNOOC, China

Co-author: Yifan He, CNOOC, China

Dynamic Integrated Solution for Master Facilities Plan

Mostafa Kaouri, Senior Systems Analyst, Kuwait Oil Company, Kuwait

Co-authors: Abdulla Al Sairafi, Kuwait Oil Company, Kuwait

Bashayer Sadiq, Kuwait Oil Company, Kuwait

Organic Organizational Structures: Can Boost the Performance in a Rapidly Changing Upstream Industry?

Vahid Jaleh, Consultant Reservoir and Production Engineer, Dodsal Group, Australia

Smooth Cooperation Improving Venture Performance

Guo Xu, Senior Finance Manager, Petrokazakhstan, Kazakhstan
Thriving in a Shallower Profit Pool for Oil and Gas  

Luis Uriza, Partner and Americas Oil and Gas Leader, Bain and Company, Colombia  

Co-authors:  
John McCreery, Bain and Company, USA  
Nitesh Prakash, Bain and Company, UK  

New Way Forward Through Collaboration & Technology — Data Gumbo & The Carnrite Group Collaboration  

Adnan Khan, Associate Director, Carnrite Group, USA  

Co-author:  
William Fox, Data Gumbo, USA  

Progress of Diverter Technology in the Past Decade for Petroleum Production Applications: A Review  

Dr. Wengang Li, Scientist, Saudi Aramco, Saudi Arabia  

Co-authors:  
Qasim Sahu, Saudi Aramco, Saudi Arabia  
Mohammed Bataweel, Saudi Aramco, Saudi Arabia  

RT01 – FUTURE OF UNCONVENTIONAL RESOURCES  

Monday, December 7, 2020 | 16:00 – 17:30  

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.  

Moderator:  
Sarah Bell, Unconventionals Chief Petroleum Engineer, Shell Canada Limited, Canada
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.

Moderator: Assoc. Prof Zuhtu Bati, Managing Director (TPAO) and Instructor (METU), Turkish Petroleum and Middle East Technical University, Turkey

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.

Moderator: Tiago Homem, General Manager for the Development of the Brazilian Pre-Salt, Petrobras, Brazil
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.

F06 – INNOVATIVE REFINING TECHNOLOGIES

Monday, December 7, 2020 | 14:15 – 15:45

With the need for cleaner gasoline and diesel fuels, new challenges arise with respect to lower sulfur contents in products (particularly of marine fuels, IMO 2020), cleaner feedstocks and reside processing. Improvements, e.g. of catalysts for HDS, FCC and alkylation could help in this respect. Also, emission reduction and co-processing of renewables are big issues. The major question is: Which innovative technologies will have an impact on the future of the refining sector?
Isoalky Technology: Innovation in Alkylate Gasoline Manufacturing Technology

Dr. Hye Kyung Timken, Principal Scientist, Chevron, USA

Co-authors: Huping Luo, Chevron, USA
BongKyu Chang, Chevron, USA
Matthew Cole, Honeywell UOP, USA
Rajeswar Gattupalli, Honeywell UOP, USA

Process Technologies to Manage the Global Bunker Fuel Sulfur Cap

Dr. Carlos Prieto, Manager of Refining Department, Research Center, CEPSA, Spain

Co-authors: Berta Aramburu, CEPSA, Spain
Juana Frontela, CEPSA, Spain

Converting Heavy Oils into Light Petrochemicals Through Pump-free Ebullated Bed Hydrocracker

Dr. Bo Chen, Research Assistant, Sinopec, China

Co-authors: Zhaohui Meng, Sinopec, China
Hailong Ge, Sinopec, China
Ling Liu, Sinopec, China
Huihong Zhu, Sinopec, China
Tao Yang, Sinopec, China

Hydrodearylation: A New Process to Enhance Btx Yields in an Aromatics Recovery Complex

Dr. Robert Hodgkins, Senior Scientist, Saudi Aramco, Saudi Arabia

Co-author: Omer Koseoglu, Saudi Aramco, Saudi Arabia
Advanced Coker Technology for Reduction of Coke Yield

Dr. Madhusudan Sau, Chief General Manager Refining Technology, Indian Oil Corporation Ltd, India
Co-authors: Satyen Das, Indian Oil Corporation Ltd, India
Pradeep Pr, Indian Oil Corporation Ltd, India
Prasad Thvd, Indian Oil Corporation Ltd, India
Madhusudan Sau, Indian Oil Corporation Ltd, India
Gurpreet Kapur, Indian Oil Corporation Ltd, India

LC-LSFO for IMO 2020 Compliant LSFO Production

Dr. Julie Chabot, Resid Research and Development Team Leader, Chevron Energy Technology Company, USA
Co-authors: Goutam Biswas, Chevron, USA
Shuwu Yang, Chevron, USA

PetroChina’s Gasoline Quality Upgrading Technologies and Applications

Tianshu Li, Senior Engineer, China National Petroleum Corporation, China
Co-authors: Yana Ju, PetroChina Petrochemical Research Institute, China
Shaohui Ge, PetroChina Petrochemical Research Institute, China
Qinfeng Zhao, PetroChina Petrochemical Research Institute, China

Catalytic Cracking of Heavy Crude Oil in Supercritical-Water in the Presence of Modified-Carbon-Clothes-Nanostructures

Maryam Mousavi, Doctoral Student, Shiraz University, Iran
Co-authors: Saeed Ghaseminezhad Raeini, Shiraz University of Technology, Iran
Reza Mansourian, Shiraz University, Iran
Feridun Esmaeilzadeh, Shiraz University, Iran

Hierarchical Hollow Micro/Nanostructures of Metal Oxides: Effect of Sulfidation Pressure on Particle Morphology & Hydrodesulfurization

Dr. Ramesh Kumar Chowdari, Postdoctoral Researcher, Universidad Nacional Autonoma de Mexico Centro de Nanociencias y Nanotecnologia, Mexico
Co-authors: Jorge Noe Diazde Leon, Universidad Nacional Autonoma de Mexico Centro de Nanociencias y Nanotecnologia, Mexico
Sergio Fuentes Moyado, Universidad Nacional Autonoma de Mexico Centro de Nanociencias y Nanotecnologia, Mexico
Development of Extending Operation Cycle of Diesel Hydrogenation Unit for Sinopec

Guo Rong, Professor, Dalian Research Institute of Petroleum and Petrochemicals of Sinopec, China

Co-authors: Liu Li, Dalian Research Institute of Petroleum and Petrochemicals of Sinopec, China
Zhou Yong, Dalian Research Institute of Petroleum and Petrochemicals of Sinopec, China

Innovative Software Improves Crude Oil Logistics Scheduling

Dr. Aurelio Ferrucci, Executive VP, Prometheus SRL, Italy

How Refiners Can Capture the Benefits of the Energy Transition and Digitalization

Nitesh Prakash, Partner, Bain and Company, UK

Co-authors: Jose De Sa, Bain and Company, Brazil
Joachim Breidenthal, South Africa

Development of On-stream Correlation Models to Predict Cloud Point

Madi Asiri, Superintendent, Saudi Aramco Total Refining and Petrochemical Company, Saudi Arabia

F07 – RESILIENT REFINING

Monday, December 7, 2020 | 16:00 – 17:00

Demand for petroleum is still expected to rise but in the refining sector there are several uncertainty factors, such as arrival of new crude oil sources including shale oil, changes in the demand structure with the increase of electric vehicles and IMO sulfur regulations, and rapid demand decrease in developed countries due to the Paris Agreement. Consequently, the refining industry will need to become better prepared for future changes by integrating upstream and downstream sectors, adopting new equipment management systems, cutting-edge digital technology, etc. This forum will discuss how the oil refining sector can best respond to future uncertainties.

Chair: Mike Ashar, Consultant, Canada
Vice Chairs: Peter Šrámek, Production Director, Slovnaft, Slovakia
Saad Binmatlig, Manager, Downstream Capital Portfolio Planning, Saudi Aramco, Saudi Arabia
Walking the Tightrope

Mark Broadbent, Refining Analyst, Wood Mackenzie, USA

Achieving Product Resilience for a Complete Robust Portfolio in World-class Refinery and Petrochemical Complex

Faris Subahe, Business Development Engineer, SATORP, Saudi Arabia

Master Planning Strategies for a Resilient Refinery and Petrochemical Complex Configuration

Karthick Ramalingam, Manager Technical Services, Mangalore Refinery and Petrochemicals Ltd, India

Co-author: Nandakumar V, Mangalore Refinery and Petrochemicals Ltd, India

A Novel Approach to Explore Potential Crudes Fitted to the Bottom Upgrading Process

Naoki Kono, Chief Researcher, JXTG Nippon Oil and Energy Corporation, Japan

Vision for the Refinery of the Future

Marcelo Carugo, VP Global Refining and Chemical Programs, Emerson Automation Solutions, USA

Higas Sox Scrubbing Technology — An Innovative Answer to Marpol Challenge

Anaji Rajiv Kumar Tompala, Senior Manager-R&D, Hindustan Petroleum Corporation Ltd, India

Co-authors: Arun Kuniyil, Hindustan Petroleum Corporation Ltd, India Shankar Jainendrakumar, Hindustan Petroleum Corporation Ltd, India Ramachandrarao Bojja, Hindustan Petroleum Corporation Ltd, India

Flexible Upgrading Technique Through Solvent De-asphalting, Residue Hydrodesulfurization and Residue Fluid Catalytic Cracking

Dr. Koichi Matsushita, Chief Researcher, JXTG Nippon Oil and Energy Corporation, Japan
Novel Process for the Production of Environmentally Friendly Rubber Process Oils from Low-value Refinery Streams

Dr. Valavarasu G., Deputy General Manager, Hindustan Petroleum Corporation Ltd, India
Co-authors: Srinivasarao Ganagalla, Hindustan Petroleum Corporation Ltd, India
Ramachandrarao B, Hindustan Petroleum Corporation Ltd, India
Sriganesh Gandham, Hindustan Petroleum Corporation Ltd, India

Heavy Oil Residues Into High-purity Carbon Materials

Alexandra Boytsova, Researcher, TU Freiberg Mining Academy, Russia
Co-authors: Natalia Demchenko, Ukhta State Technical University, Russia
Strokin Sergey, Saint Petersburg Mining University, Russia

Flare Gas Transmission to Value-added Products

Hossein Parsa, Director of R&D, Nouri Petrochemical Company, Iran

F08 – CHEMICALS ON THE RISE

Tuesday, December 8, 2020 | 14:15 – 15:45

With accelerated changes in engine technologies and public carbon policies, the consumer side of the downstream equation comes into a transition phase. Petroleum refiners and petrochemical producers sharpen focus to find and accommodate new products in their product portfolio. This forum will present case studies of how downstream companies develop innovative, economic and sustainable responses in their molecule management for future markets.

Chair: Joe Blommaert, Senior Vice President, Global Operations, ExxonMobil Chemical Company, USA
Vice Chairs: Krisztina Petrényiné Szabó, Petrochemical Business Development Director, Downstream Business Development, Hungary
Dr. Olivier Thorel, Executive Director, Chemicals, Saudi Aramco, Saudi Arabia

F08 – PAPERS

Main Challenges on the Global Polyolefin Market — From Oversupply to Sustainability

Roberto Ribeiro, Managing Director, Asterisk Partners, USA
Mol Group Downstream’s Opportunities and Challenges in the ‘Rise of Chemicals’ Era

Krisztina Petrényiné Szabó, Downstream Business Development Director, MOL Group Downstream Business Development, Hungary

Novel Reaction Systems Maximizing Conversion of Crude Oil to Chemicals

Dr. Kareemuddin Shaik, Engineering Consultant, Saudi Aramco, Saudi Arabia

Co-authors:
- Essam Alsayed, Saudi Aramco, USA
- Theodore Maesen, Chevron, USA
- Pedro Santos, McDermott, USA

Winning in the New Customer-centric Environment

Wolfgang Falter, Global Chemicals Leader, Deloitte, Germany

Co-author: Duane Dickson, Deloitte US, USA

F08 – POSTERS

Optimization of Dual-functional Metathesis/zeolite Materials for the On-purpose Production of Propylene from 2-Butene

Dr. Brian Hanna, Laboratory Scientist I, Aramco Services Company, USA

Co-authors:
- Sergio Fernandez, Aramco Services Company, USA
- Maxim Bukhovko, Aramco Services Company, USA
- Timothy Kucharski, Aramco Services Company, USA
- Michele Ostraat, Aramco Services Company, USA
- Sohel Shaikh, Saudi Aramco Oil Company, Saudi Arabia
- Munir Khok, Saudi Aramco Oil Company, Saudi Arabia

Lao – An Important Derivative of Ethylene

Shahid Azam, Chief Scientist, Sabic, Saudi Arabia

Co-author: Mohammed Alhazmi, Sabic, Saudi Arabia

Molecule Valorisation Derived Refinery Configuration of the Future

Srinivas Moturi, Senior Manager, MRPL, India

On-purpose Propylene Production from Light Hydrocarbons at Low Energy Consumption with Zeolite-based Composite Catalysts

Dr. Shinya Hodoshima, Group Leader, Chiyoda Corporation, Japan
Achieving Self Sufficiency in Petrochemicals Through Alternate Feedstocks: Comparative Case Study for Viability Assessment

Vineet Bakshi, Senior Process Manager Strategy and BD, Engineers India Ltd, India

Co-authors: Anil Kumar Singh, Engineers India Ltd, India
Snigdho Majumdar, Engineers India Ltd, India
Manoj Kumar, Engineers India Ltd, India

A Fuel Gas Additive for Metal Cutting Operation

Dr. Narayanan Krishnamurthy, Chief Manager R&D, Hindustan Petroleum Corporation Ltd, India

Co-authors: Sandip Bowmik, Hindustan Petroleum Corporation Ltd, India
R Avi B, Hindustan Petroleum Corporation Ltd, India
Ramchandra Rao B, Hindustan Petroleum Corporation Ltd, India

Production of High Value, Low Aromatic Specialty Solvents from Lube Refinery

Dr. Valavarasu G., Deputy General Manager, Hindustan Petroleum Corporation Ltd, India

Co-authors: Pradyutkumar Dhar, Hindustan Petroleum Corporation Ltd, India
Ramachandrarao B, Hindustan Petroleum Corporation Ltd, India
Sriganesh Gandham, Hindustan Petroleum Corporation Ltd, India

Hydrogenation of Alkylaromatics Over Rh/Silica

Dr. Feras Alshehri, Assistant Research Professor, King Abdulaziz City for Science and Technology National Center for Petrochemical Technology, Saudi Arabia

Co-authors: S David Jackson, University of Glasgow, UK
H Micha Weinert, University of Glasgow, UK

Application and Discussion of Crystalline Stabilizer Masterbatch of Beta Nucleating Agent in PP-RCT Pipe

Jin Ma, Institute of Dushanzi Petrochemical Company CNPC, Institute of Dushanzi Petrochemical Company PetroChina, China

Behavior of Partially Hydrolyzed Polyacrylamide/Polyethyleneimine Hydrogels Reinforced with Coal Fly Ash

Priscila Oliveira, Researcher, UFRJ, Brazil

Co-authors: Kaique Pereira, UFRJ, Brazil
Kaio Pereira, UFRJ, Brazil
Claudia Mansur, UFRJ, Brazil
Integrating refining and petrochemical sites helps reduce volatility in the petroleum value chain. When properly designed, planned and implemented, integration will not only diversify companies’ product portfolio, but will reduce site specific costs, increase capital efficiency and elevate returns. The practical case studies in this Forum will demonstrate how strategic planning and operation of refining and petrochemical conversion units with common utilities capture long term business benefits.

Chair: S. M. Vaidya, Executive Director (Operations), IndianOil Corporation Ltd, India
Vice Chairs: Mikhail Lebedsky-Tambiev, General Director, LLC “Lengipromneftekhim”, Russia
Goran Stojilkovic, Deputy CEO for Petrochemical Business, NIS Gazprom Neft, Serbia

On the Direct Conversion of Crude Oil to Petrochemicals: Process and Catalyst Design
Jorge Gascon, Director and Full Professor: KAUST Catalysis Center (KCC), King Abdullah University of Science and Technology KAUST, Saudi Arabia
Co-authors: Wei Xu, Saudi Aramco, Saudi Arabia
Ola Ali, Saudi Aramco, Saudi Arabia
Isidoro Morales Osorio, Saudi Aramco, Saudi Arabia
Tuiana Shoinkhorova, KAUST, Saudi Arabia
Alla Dikhtiarenko, KAUST, Saudi Arabia
Alabdullah Mohammed, Saudi Aramco, Saudi Arabia

Crossing the Chasm to Convergence
Duane Dickson, Oil Gas and Chemicals Leader Deloitte, Deloitte US, USA
Co-author: Wolfgang Falter, Deloitte Germany, Germany

Converting Crude to Chemicals: A Revolution or Just Another Evolution?
Alban Sirven, Refining Technology Lead Expert, TechnipFMC, France
Co-author: Benjamin Andre, TechnipFMC, France
Olefin-Catalytic-Cracking Process-One Upgrading Technology for Refining

**Dr. Jing Shi**, Engineer, Sinopec Shanghai Research Institute of Petrochemical Technology, China

Co-authors: **Guoliang Zhao**, Sinopec Shanghai Research Institute of Petrochemical Technology, China
**Jiawei Teng**, Sinopec Shanghai Research Institute of Petrochemical Technology, China

---

**Solar Refinery — An Integrated Refinery, Petrochemical and Chemical Plant of the Future**

**Srivardhan Grandhi**, Senior Manager, Engineers India Ltd, India

Co-authors: **Balaji Namadevan**, Engineers India Ltd, India
**Suresh Chandra Gupta**, Engineers India Ltd, India
**Sheoraj Singh**, Engineers India Ltd, India
**Vartika Shukla**, Engineers India Ltd, India

---

**Refinery Chemical Integration is a Strategic Necessity**

**Alan Gelder**, VP Refining Chemicals and Oil Markets, Wood Mackenzie, UK

---

**Co-Conversion of Waste Plastic to Light Distillates in Delayed Coking Process**

**Dr. Madhusudan Sau**, Chief General Manager Refining Technology, Indian Oil Corporation Ltd, India

Co-authors: **Pradeep PR**, Indian Oil Corporation Ltd, India
**Prasad THVD**, Indian Oil Corporation Ltd, India
**Satyen Kumar Das**, Indian Oil Corporation Ltd, India
**Madhusudan Sau**, Indian Oil Corporation Ltd, India
**GS Kapur**, Indian Oil Corporation Ltd, India

---

**Mesoporous Zeolites Supported Catalysts for Selective Ring Opening of 1-Methylnaphthalene with Remarkably Enhanced Btexas Yield**

**Dr. Ke Zhang**, Senior Petroleum Engineer, Aramco Services Company, USA

Co-authors: **Michele Ostraat**, Aramco Services Company, USA
**Miao Sun**, Saudi Aramco, Saudi Arabia
**Sohel Shaikh**, Saudi Aramco, Saudi Arabia
**Raed Abudawoud**, Saudi Aramco, Saudi Arabia
Simultaneous Production of Benzene and Gasoline from C-6 Heart Cut of FCC Gasoline

Dr. Madhukar Garg, Head Refining and Petchem Research and Development, Reliance Industries Ltd, India
Co-author: Ajit Sapre, Reliance Industries Ltd, India

Refining and Petrochemicals Integration: The Future of the Downstream Industry

Raquel Cantón, Business Development Engineer, CEPSA QUIMICA, Spain

Integration of Refineries and Petrochemicals (Case Study: Capital of Iran Energy Petrochemicals and Gas Refineries)

Ali Rahneshin, Commercial Department & Iran National Committee Member, Borzouyeh Petrochemical Complex and Iran Young Representative to WPC Young Professionals, Iran
Co-authors: Amin Avazpour, NIOC, Iran
Erfan Hasheminasab, Amirkabir University of Technology, Iran

F10 – GROWING VALUE IN MIDSTREAM

Wednesday, December 9, 2020 | 14:15 – 15:45

This forum will analyse different strategies and growth drivers to achieve value-chain margin opportunities in the oil and gas midstream segment, including proactively growing the scale and increasing utilization of its assets or looking for a market niche that provides a significant build-out opportunity for midstream providers. Other best practices could cover integrated midstream solutions across products, basins and services as well as investments into the various means of transport (pipeline, shipping, trucking, rail, etc.) or storage and ways to increase value in the wholesale marketing of crude or refined petroleum products and overcoming barriers to regulatory and commercial entry.

Chair: Csaba Zsótér, Supply & Trading Director, Downstream Commerce & Optimization, MOL Group, Hungary
Vice Chairs: Marcelino Gomes, Executive Manager of Pipeline Production, Petrobras, Brazil
Lourdes Rodríguez, Executive Director, Repsol Trading, Spain
F10 – PAPERS

Using the Surplus Storage Capacity of an Old Refinery: A Trading Strategy to Success

Raquel Cantón, Business Development Engineer, CEPSA QUIMICA, Spain

Is the Pipe Half Full or Half Empty?

Stephanie Kainz, Senior Associate, RS Energy Group, Canada

Midstream Holds the Key for Hydrocarbons Sustainability

Shailendra Mohite, Engineer Manufacturing Div, Kuwait Petroleum International, Kuwait

Bringing Agility to Midstream: A Critical Success Factor

Ashley Horstman, Business Strategy Executive, Accenture, USA

F10 – POSTERS

How to Move from Digitalizing Pipeline Operations to Digitally Transforming Them

Chris Amstutz, Vice President, Oil & Gas Industry Programs, Emerson Automation Solutions, USA

Improved Oil Sands Sustainability Through Partial Upgrading

Richard Masson, Chief Commercial Officer, Fractal Systems, Canada

Co-author: Ed Veith, Fractal Systems, Canada

Values Embedded in the Growth of the Midstream Supply Chain of Natural Gas

Dániel Horváth, Natural Gas Market Specialist, MOL Group, Hungary

Three Trends Reshuffling North America’s Midstream Industry

Whit Keuer, Partner, Bain and Company, USA

Co-authors: Ethan Philips, Bain and Company, USA

Lili Chahbazi, Bain and Company, UK

Maximizing Top Quartile Potential: Midstream Strategies for Achieving True Earnings Capacity

Chris Amstutz, Vice President, Oil & Gas Industry Programs, Emerson Automation Solutions, USA
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.

Moderator:  
Dr. Jamil Al Bagawi, Chief Engineer, Saudi Aramco, Saudi Arabia

**RT05 – HOW TO ENSURE ASSET INTEGRITY IN A DIGITAL WORLD**

Thursday, December 10, 2020 | 10:45 – 11:45

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?

Moderator:  
Dr. Jamil Al Bagawi, Chief Engineer, Saudi Aramco, Saudi Arabia

**RT06 – THE FUTURE OF THE RETAIL BUSINESS MODEL**

Thursday, December 10, 2020 | 14:15 – 15:45

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-cantered 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.

Moderator:  
Laura Garcia Chiquero, Leader of Strategy and New Business Development Retail, CEPSA, Spain
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.

**F11 – TRANSPORT, INFRASTRUCTURE AND STORAGE OF NATURAL GAS**

Monday, December 7, 2020 | 14:15 – 15:45

New strategies and technologies for transport and storage of natural gas could change the availability and affordability of this energy source. 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 development of spot markets and a transition to new energy sources. This requires continued, targeted investments and cost-efficient operations. This forum will address technical, financial, regulatory, strategic and geopolitical challenges for industry and governments.
Chair: **Lydia Johnson**, Manager, Americas Marketing & Business Development, ExxonMobil Gas Power & Marketing, USA

Vice Chairs: **Kirill Lyats**, General Director, LNG Gorskaya LLC, LNG Gorskaya Overseas, Russia

**Pascal Baylocq**, President & CEO, GEOSTOCK, France

---

**F11 – PAPERS**

**Dynamic Delivery — America’s Evolving Oil and Natural Gas Transportation Infrastructure**

**Amy Shank**, Director of Pipeline Safety & Asset Integrity, Williams, USA

**Intelligent Pipelines, Pipeline Networks: AI Technology Application, Smart Sensing Technology Research and Dynamic Data Application**

**Yunbin Ma**, Deputy Director, PetroChina Pipeline Research Center, China

Co-authors: **Hongjun Dong**, PetroChina Pipeline Company, China

**Yunbin Ma**, PetroChina Pipeline Research Center, China

**A Novel Integrated Road Map for Using Depleted Oil Reservoir as Future Underground Gas**

**Saeed Sajjadian**, Reservoir Engineering, NIOC, Iran

**Pipeline Pricing: Fixing the Costly Disconnect Between Natural Gas and Wholesale Electricity Markets**

**N. Jonathan Peress**, Senior Director, Environmental Defense Fund, USA

Co-author: **Natalie Karas**, Environmental Defense Fund, USA

---

**F11 – POSTERS**

**Addressing Pipeline Safety Using New Practices and Techniques**

**Brandon Johnson**, Project Manager, ADI Analytics, USA

Co-author: **Uday Turaga**, ADI Analytics, USA

**Biotechnological Solutions: A New Paradigm for Minimizing Pipeline Corrosion in Industry — an Indian Perspective**

**Megha Chamoli**, Executive of Formulation & Development, Windlas Ltd, India

Co-authors: **Vinay Kumar Gupta**, Oil and Natural Gases Corporation Ltd, India

**Dhaval Gupta**, Schlumberger Asia Services Ltd, India
Rapid Access to Global Energy Markets by Clean and Reliable LNG Solutions

Sveinung Stohle, President and CEO, Hoegh LNG, Norway

An International Natural Gas Purchase & Sale Agreement Running on Blockchain

Onur Uyanusta, Energy Expert, Turkish Energy Market Regulatory Authority, Turkey

Top of Line Corrosion (TLC) Investigation and Challenges for Wet Sour Gas Subsea Pipeline

Dr. Faisal Alabbas, Consultant, Saudi Aramco, Saudi Arabia
Co-author: Venkateswa Ganugapenta, Saudi Aramco, Saudi Arabia

RTP Implementation for Gas Application

Abdulateef Alafaleg, Operation Engineer, Saudi Aramco, Saudi Arabia
Co-authors: Mohammad Alkhabrani, North And Central Ghawar Gas Producing, Saudi Arabia
Anwar Parvez, Saudi Aramco, Saudi Arabia

Challenges for Operational Readiness of First LNG Regassification and Import Facility in State of Kuwait

Mohammad Fns Alotaibi, Manager Operations LNGI, KIPIC, Kuwait
Co-author: Mohammed Riyaz Shaikh, KIPIC, Kuwait

Natural Gas Replacement with LPG-Air and LNG for Peak Shaving

Behrouz Moez, Project Manager, National Iranian Gas Company, Iran


Mr. Eshu, Senior Manager, Bharat Petroleum Corporation Ltd, India

Pipeline Shore Crossing Approaches in Arctic Conditions

Lesana Kurbonshoeva, Representative of Russia in the WPC YPC, RNC WPC, Russia
Co-authors: Anatoly Zolotukhin, Gubkin University, Russia
Ove T. Gudmestad, University of Stavanger, Norway
The global natural gas market is growing, driven by the availability of shale gas and the increase in LNG trade. LNG provides a viable route to monetize large gas reserves in remote locations, which have no significant markets nearby and limited connectivity. Transformation of natural gas markets from the regional to the global level is not without challenges, but supported by low prices, large supply and lower air pollution compared with other carbon fuels, the role of natural gas in the future energy mix is assured. This forum will discuss the outlook of globalized production and transportation of natural gas, overview of the global gas reserves, supply and demand outlook and regional differences, as well as cost effectiveness and price issues.

Chair:  
Ajay Shah, VP Shell Energy Asia Developing Gas Markets at Shell, Shell International, Netherlands

Vice Chairs:  
Anne Rocher, VP LNG, TOTAL, France  
Laura Rejon-Perez, Wholesale and Gas Trading Division Head, Repsol, Spain

F12 – PAPERS

Opportunity for Small Scale LNG Technology — Practical Case for the Kingdom of Saudi Arabia

Dr. Calogero Migliore, Science Specialist, Saudi Aramco, Saudi Arabia
Co-author: Stephen Benchluch, Saudi Aramco, Saudi Arabia

How the US LNG Export May Compete on Asian Markets in Increasing Arbitrage

Amina Talipova, Research Associate, Higher School of Economics, Russia
Co-author: Sergei Parsegov, Halliburton, USA

Global Gas and LNG Markets: Are the Cycles Becoming More Pronounced?

Kristy Kramer, Head of Markets Gas and LNG Research, Wood Mackenzie, USA

LNG: The Glue Linking Global Gas Markets

Susan Sakmar, Visiting Professor, University of Houston Law Center, USA
The forum will address the role of natural gas in the energy transition and look at its use across all sectors of the global economy—as feedstock for the petrochemical industry and an alternative to liquid transport fuels, as well as to heat, cool and light homes, and power industries. As the cleanest-burning hydrocarbon it helps reduce emissions by replacing coal, but the industry must increase its efforts to reduce the greenhouse gas intensity of its supply chain—from production to delivery to the customer, while ensuring that gas remains competitive with other energy sources.

Chair: Liv Astri Hovem, CEO Oil & Gas, DNV GL, Norway

Vice Chairs: Luiz Costamilan, Executivo Secretary of Natural Gas, IBP – Brazilian Petroleum, Gas and Biofuels Institute, Brazil

Nick Fulford, Global Head of Gas & LNG, Baker Hughes, USA
Global Gas Markets in Different Energy Scenarios  
**Eirik Waerness**, SVP and Chief Economist, Equinor, Norway

The Future of Natural Gas in a Carbon Neutral Economy  
**Geoffroy Hureau**, Secretary General, CEDIGAZ, France

The Role of Liquefied Natural Gas as a Marine Fuel  
**Dr. Francesco Stipo**, President, Houston Energy Club, USA

Demonstration of Hydrogen Spiked Compressed Natural Gas (HCNG): A Solution Towards Energy and Environment Management  
**Sauhard Singh**, Senior Research Manager, Indian Oil Corporation Ltd, India  
Co-authors: **Sumit Kumarmishra**, Indian Oil Corporation Ltd, India  
**Mukul Maheshwari**, Indian Oil Corporation Ltd, India  
**Reji Mathai**, Indian Oil Corporation Ltd, India  
**Deepak Saxena**, Indian Oil Corporation Ltd, India  
**SSV Ramakumar**, Indian Oil Corporation Ltd, India

Is Natural Gas More Than a Transition Fuel?  
**Antonio Melcon**, Natural Gas Vice President, Cepsa, Spain

Natural Gas and NGLs: An Imperative for Shaping India’s Future  
**Vineet Bakshi**, Senior Process Manager Strategy and BD, Engineers India Ltd, India  
Co-authors: **Snigdho Majumdar**, Engineers India Ltd, India  
**Anil Kumar**, Engineers India Ltd, India  
**Manoj Kumar**, Engineers India Ltd, India

Molecule Management: Strategies for Making India a Gas Based Economy  
**Sumit Aggarwal**, Manager, Engineers India Ltd, India

An Innovative Gas Model to Face the Energy Transition: The Implicit Allocation Mechanism  
**Pedro Miras**, Sr. Gas Balance Analyst, Repsol, Spain  
Co-author: **Paloma Izquierdo**, Repsol, Spain
Measuring Methane Emissions from Industrial Facilities with Satellites: From Data to Actionable Insight

Jean Francois Gauthier, Vice President Sales and Marketing, GHGSat, Canada
Co-authors: Jean Francois Gauthier, GHGSat, Canada, Stephane Germain, GHGSat, Canada

Natural Gas Consumption in Sao Paulo State, Brazil: An Analysis of Sectors for Further Insertion

Dr. Drielli Peyerl, Young Investigator, University of São Paulo, Brazil
Co-authors: Mariana Oliveira Barbosa, University of São Paulo, Brazil

Decentralization of Power Generation and Consumption Model: New Role of Natural Gas

Diana Tyrtysyova, Senior Lecturer, Gubkin Russian State University of Oil and Gas, Russia

F14 – TECHNOLOGY INNOVATION IN MID- AND DOWNSTREAM GAS

Wednesday, December 9, 2020 | 14:15 – 15:45

Innovative developments in LNG and FLNG are helping to develop new frontiers and make gas more competitive, while digitalisation allows for processes to become more efficient, reservoirs to be re-evaluated and enhanced communications with all customers across the entire value chain. Other potential areas for technological innovation to be discussed include large and small-scale CHP units, capture of CO2 from gas power generation, GTL, more efficient hydrogen production and the development of the next generation of natural gas-powered vehicles. We will also look at the reduction of greenhouse gases, as well as the utilization of all waste products including sulphur.

Chair: Dr. Ammar Al Nahwi, Manager, R&DC, Saudi Aramco, Saudi Arabia
Vice Chairs: Tongwen Shan, Director, R&D Center, CNOOC Gas and Power Group, China, Dr. Reza Azin, Faculty Member, Associate Professor of Petroleum Engineering, Persian Gulf University, Iran
De-Butanizer Columns Equipped with Dividing Wall (DW) Eliminating an Existing RVP Column in NGL Fractionation

Hae Yong Noh, Process Engineer, Saudi Aramco, Saudi Arabia

Integration of Renewable Power with Gas-to-Liquid and Hydrogen Production for Greenhouse Gas Reduction

Wessel Nel, Associate, Hatch, Canada
Co-authors: Johan Malan, Hatch, USA
Yun Bai, Hatch, Canada
Patrick Mraz, Hatch, Canada

Direct Conversion of Syngas to Light Olefins

Dr. Jiao Wenqian, Engineer, Sinopec Corp, China
Co-authors: Zhou Haibo, Sinopec Corp, China
Su Junjie, Sinopec Corp, China
Liu Su, Sinopec Corp, China
Wang Yangdong, Sinopec Corp, China

Shell Turbo Trays: Pushing the Limits of Innovation for Increased Gas Processing Capacity and Performance

Karl Stephenne, Development Engineer, Shell Projects and Technology, India
Co-author: Rajiv Srinivasan, Shell Projects and Technology, India

Elucidating Key Structure-property Relationships to Unlock the Next Generation of Membranes for H2s Removal

Dr. Benjamin Sundell, Senior Research Scientist Aramco Services Company, USA
Co-authors: Daniel Harrigan, Aramco Services Company, USA
John Yang, Aramco Services Company, USA
Jeremy O’Brien, Aramco Services Company, USA
Biochar Based Decentralized Modular Technology for Hydrogen and Carbon Nanotubes Production with Low CO2 Footprint

Pramod Kumar, Deputy General Manager, Hindustan Petroleum Corporation Ltd, India

Co-authors: Lavanya Meesala, Hindustan Petroleum Corporation Ltd, India
Ramachandra Rao B, Hindustan Petroleum Corporation Ltd, India
Sriganesh Gandham, Hindustan Petroleum Corporation Ltd, India

Zero Flaring Journey of Petroleum Development of Oman (PDO)

Tariq Al Battashi, Rotating Equipment Engineer, Petroleum Development of Oman, Oman

Branched Nanoparticles Improve Membrane Performance and Stability in Aggressive Natural Gas Feeds

Dr. Benjamin Sundell, Senior Research Scientist, Aramco Services Company, USA

Co-authors: Ke Zhang, Aramco, USA
Daniel Harrigan, Aramco, USA
Steven Hayden, Aramco, USA
Zachary Smith, MIT, USA
Lucas Chi, MIT, USA

High-Pressure Pure and Mixed Sour Gas Permeation Properties of Modified Pebax Membranes

Dr. John Yang, Senior Research Scientist, Aramco Services Company, USA

Co-authors: Daniel Harrigan, Aramco Services Company, USA
Milind Vaidya, Saudi Aramco, Saudi Arabia

Research and Field Test of Wireless Production Regulation Technology in Gas Well

Dr. Yukun Fu, Engineer, Gas Production Engineering Research Institute of Southwest Oil and Gas Field Company of Petro China, China

Co-authors: Huiyun Ma, Engineering Technology Research Institute of Southwest Oil and Gas Field Company of PetroChina, China
Yukun Fu, Engineering Technology Research Institute of Southwest Oil and Gas Field Company of PetroChina, China
Chenggang Yu, Engineering Technology Research Institute of Southwest Oil and Gas Field Company of PetroChina, China
Polyimide Membranes Development for Sour Gas Feed Separations from Natural Gas

Dr. Garba Yahaya, Science Specialist, Saudi Aramco, Saudi Arabia

Co-author: Seunghak Choi, Saudi Aramco, Saudi Arabia

More Efficient Process for Hydrogen Recovery Through Simulation of an Industrial Hollow Fiber Module

Dr. Majid Esmaeili, Researcher and Project Manager, Research Institute of Petroleum Industry, Iran

Co-authors: Maryam Tavakolmoghadam, Research Institute of Petroleum Industry, Iran
            Mahdieh Abolhasani, Petroleum and Gas Engineering Semnan University of Technology, Iran

Digital Tank Gauging for Optimized LNG Measurement and Safety in Full Containment Tanks

Hakan Jubel, Business Development Manager for Tank Gauging Cyrogenic Systems, Emerson Automation Solutions, USA

Hydrophilic Network Polymer Membranes for Bulk H2s Removal from Natural Gas

Daniel Harrigan, Research Engineer, Aramco, USA

Co-authors: Benjamin Sundell, Aramco, USA
            John Lawrence, Aramco, USA
            Jeremy O’Brien, Aramco, USA

RT07 – ROUTES TO MARKET

Monday, December 7, 2020 | 16:00 – 17:30

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 do geopolitics, free trade market environments and environmental requirements frame the future routes to market?

Moderator: Mithat Rende, Former Ambassador and Energy Diplomat, TSKB Board Member, TSKB (Turkiye Sinai Kalkinma Bank), Turkey
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 digitalization, 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.

Moderator:  Frode Leversund, CEO, Gassco, Norway

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.

Moderator:  Dr. Weiguo Shan, Head of Gas Market Research, Chief Academician, CNPC Economics & Technology Research Institute, China
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.

F15 – LOW CARBON TECHNOLOGIES AND STRATEGIES FOR OIL & GAS

Monday, December 7, 2020 | 14:15 – 15:45

Society and stakeholders are looking to the oil and gas industry to take a lead in low carbon strategies for the future and to reduce their carbon footprint. Responding to the new energy economy scenarios, oil and gas companies are developing innovative technologies, which may be based on hydrogen, methanol/alkohols, biological sources, or continued use of existing infrastructure incorporating CCUS. This Forum will be looking at a number of ways oil and gas companies can refashion themselves as the low-carbon energy companies of the future.
The Oil & Gas Industry is Uniquely Positioned to Develop a CCUS Industry

Dr. David Nevicato, Research Program Manager, TOTAL SA, France

Distributed Hydrogen Generator for Effective Blue Hydrogen Supply Using a Hydrocarbon Supply Network

Aadesh Harale, Sr Scientist, Saudi Aramco, Saudi Arabia

Co-authors: Stephen Paglieri, Saudi Aramco, Saudi Arabia
Aqil Jamal, Saudi Aramco, Saudi Arabia
Henk Veen, TNO, Netherlands
Jaap Vente, TNO, Netherlands

Addressing the Challenge of Decarbonisation

John O’Brien, Partner, Deloitte Australia, Australia

Shell’s Gas-to-Liquids Technology and Opportunities in Energy Transition

Dr. Svetlana van Bavel, Senior Process Engineer Gas-to-Liquids, Shell Global Solutions International, Netherlands

Co-authors: HP Calis, Shell Global Solutions International, Netherlands
Clara Heuberger, Shell Global Solutions International, Netherlands
Maarten Bracht, Shell Global Solutions International, Netherlands
Abhinav Verma, Shell India Markets, India

The Impact of Fuel Properties on Gasoline Compression Ignition

Dr. Yuanjiang Pei, Technical Specialist, Aramco Services Company, USA

Co-authors: Yu Zhang, Aramco Services Company, USA
Michael Traver, Aramco Services Company, USA
Meng Tang, Argonne National Laboratory, USA
Le Zhao, Argonne National Laboratory, USA
Leveraging Refinery Hydrogen for Direct Use in Low-Temperature Polymer Electrolyte Membrane Fuel Cells

Sachin Chugh, Chief Research Manager, Indian Oil Corporation, India
Co-authors:  
S Meenakshi, Indian Oil Corporation Ltd, India  
Kapil Sonakar, Indian Oil Corporation Ltd, India  
Alok Sharma, Indian Oil Corporation Ltd, India  
GS Kapur, Indian Oil Corporation Ltd, India  
SSV Ramakumar, Indian Oil Corporation Ltd, India

Modelling of Low-Carbon Transition Strategies at Integrated Energy Companies

Dr. Jagdish Giri, Chief Chemist, Oil and Natural Gas Corporation Ltd, India

Novel Copper Based Hydrogels for Selective Carbon Dioxide Separation Application

Dr. Mona Al Dossary, Lab Scientist 1, Saudi Aramco, Saudi Arabia
Co-authors:  
Harihara Padhy, Department of Chemistry Bhopal University, India  
Omar Eltall, King Abdullah University for Science and Technology, Saudi Arabia  
Ali Behzad, King Abdullah University for Science and Technology, Saudi Arabia  
Feng Xu, King Abdullah University for Science and Technology, Saudi Arabia

Carbon Dioxide Capture from Flue Gas: Amine Based CO2 Absorbents, Processing Simulation and Industrial Demonstration

Xi Chen, Sinopec Nanjing Research Institute of Chemical Industry Company Ltd, China
Co-authors:  
Songbai Mao, Sinopec Nanjing Research Institute of Chemical Industry Company Ltd, China  
Yangyang Jiang, Sinopec Nanjing Research Institute of Chemical Industry Company Ltd, China  
Xiaodong Ye, Sinopec Nanjing Chemical Industries Company Ltd, China  
Xi Chen, Sinopec Nanjing Research Institute of Chemical Industry Company Ltd, China

Chevron Oronite Sustainability Initiative and Product Life Cycle Assessment

Dr. Arian Saffari, Engineer, Chevron, USA
Co-authors:  
Jean Bruney, Chevron, USA  
Barbara Nursey, Chevron, USA
Economic Assessment of Flared Gas Recovery

Ahmed Mohamed Roshdy, Section Head, Egyptian General Petroleum Corporation, Egypt
Co-author: Khaled Rady, Egyptian General Petroleum Corporation, Egypt

CO2 Capture at IFPEN: Large Scale Demonstrator and Perspectives for the Future of CCS

Dr. Florent Guillou, Project Manager, IFP Energies Nouvelles, France
Co-authors: Paul Broutin, IFP Energies Nouvelles, France
Stephane Bertholin, IFP Energies Nouvelles, France

Analysis of Stress-Strain State of Vertical Steel Tank with Defects Using Computer Modelling

Alena Dmitrieva, PhD-student, Saint Petersburg Mining University, Russia

Analysis of the Carbon Storage Potential in the Santos Basin, Brazil

Dr. Drielli Peyerl, Young Investigator, University of São Paulo, Brazil
Co-author: Mariana Ciotta, University of São Paulo, Brazil

F16 – LOW CARBON ENERGY OPTIONS: THE FUTURE OF RENEWABLES AND ALTERNATIVE ENERGIES

Tuesday, December 8, 2020 | 16:00 – 17:30

Driven by international treaties to reduce global emissions, fast-changing technologies and extraordinary cost declines have led to a huge growth in renewables, resulting in alternative energies becoming more mainstream and closing the gap with fossil fuels in attracting new investments. Integrating heat, power and transport energy solutions, we are looking at the way forward for the low carbon energy options, the impact of upcoming policies and regulations on energy markets, pricing and investment models and an analysis of their risk and reward profile.
Success Factors for a Low Carbon Future

Marlene Motyka, Global Renewable Energy Leader, Deloitte US, USA

Small Modular Nuclear Reactors and the Opportunity for the Petroleum Industry

Evan Konarek, Senior Engineer, Hatch Ltd, Canada
Co-author: Nathan Tedford, Hatch Ltd, Canada

Power-to-Gas Based on Bioenergy with CCU: An Efficient Storage Cycle Towards Carbon Neutrality

Daniel Fozer, Assistant Professor, Budapest University of Technology and Economics, Hungary
Co-author: Péter Mizsey, Budapest University of Technology and Economics, Hungary

Asset Smart in the Energy Transition - Finding Value in Zero Based Carbon

Andrew Smart, Energy Industry Lead, Accenture, UK
Co-author: Bruno Berthon, Accenture, France

AGI CO2 Tracer Gases Detection Technique to Monitor CO2 Sequestration at Krechba Field-Algeria

Zeboudj Faycal, Sr Reservoir Engineer, Sonatrach Groupement PTTEP PVEP, Algeria
Co-author: Bahi Lakhdar, University Mentouri Constantine Algeria, Algeria
Can National Oil Companies in Africa Drive Renewable Energy Transition to Reduce Carbon Emission?

Dr. Salisu Isihak, Senior Advisor and Head of Research Division, Nigerian National Petroleum Corporation, Nigeria
Co-author: Salisu Mukhtar, Nigerian National Petroleum Corporation, Nigeria

Dust Repellent Coating Materials for Solar Panels

Mohammed Bahattab, Research Professor, KACST, Saudi Arabia
Co-authors: Mark Mirza, ISC, Germany
Klemens Ilse, CSP, Germany
Saad Alqahtani, KACST, Saudi Arabia
Moraya Alqahtani, KACST, Saudi Arabia
Issa Abkheel, KACST, Saudi Arabia; Ali Aldhuwaile, KACST, Saudi Arabia
Walther Glaubitt, ISC, Germany

Managing the Energy Transition: Three Scenarios for Planning

Jorge Leis, Partner, Bain and Company, USA
Co-authors: Peter Parry, Bain and Company, Italy
Jenny Davis-Peccoud, Bain and Company, Netherlands

State of Change: How Texas’ Electricity Market Will Evolve in the Next Decade

John Hall, Director, Texas Energy Program, Environmental Defense Fund, USA

The Future of Biomethane as a Renewable Energy within the European Energy Market

Miguel Mediavilla Régil, Natural Gas Analyst, CORES, Spain

The Positive Performance of Floating Solar Panels to Control Dam Water Evaporation

Vahid Sajjadian, Petroleum Engineering Consultant, Namvaran, Iran
Co-authors: Mohammadali Emadi, Pasargard Company, Iran
Valiahemad Sajjadian, Masjed Soleyman Bakhtiary Petrochemical Refinery, Iran

H2 Storage and Transportation Technology – Spera Hydrogen System

Dr. Yoshimi Okada, Principal Researcher, Chiyoda Corporation, Japan
Co-author: Tomoyuki Mikuriya, Chiyoda Corporation, Japan
Effect of Guanidinium Salts on the Structural, Morphological, and Photovoltaic Performance of Perovskite Solar Cells

Dr. Mohammad Hayal Alotaibi, Associate Professor, King Abdulaziz City for Science and Technology, Saudi Arabia

Co-authors: Essa Alharbi, EPFL, Switzerland
Ahmed Alyamani, King Abdulaziz City for Science and Technology, Saudi Arabia
A Bdularahman Albadri, King Abdulaziz City for Science and Technology, Saudi Arabia
Hamad Albrithin, King Saud University, Saudi Arabia
Ibrahim Alilehyani, King Abdulaziz City for Science and Technology, Saudi Arabia

The Solar Desalination: Intuitive Scheme for CO2 Emission Cut

Hussam Khonkar, Senior Renewable Energy Researcher, KACST, Saudi Arabia

Co-author: Zaid Alotaibi, King Abdulaziz City for Science and Technology, Saudi Arabia

F17 – REGULATORY AND POLICY DRIVERS

Wednesday, December 9, 2020 | 14:15 – 15:45

The international petroleum sector is vast and complex and operates in many jurisdictions. The public expects the sector to operate in a safe, efficient, orderly and environmentally responsible manner and has entrusted regulators with oversight responsibility to ensure these objectives. The entire industry benefits from sensible regulatory practices around the world to support high standards of performance across the industry and to enhance its profile with the public. In tandem, sound public policy can drive investor confidence and thereby be a major enabler for the massive capital investment required by the petroleum industry. This forum will highlight innovative regulatory practices and public policy initiatives that support a thriving petroleum industry that meets its responsibilities to all stakeholders.

Chair: H.E. Ahmed Alkaabi, Assistant Undersecretary for Petroleum, Gas and Mineral Wealth Affairs, Petroleum Department, Ministry of Energy and Industry, UAE

Vice Chairs: Szabolcs Ferencz, Senior Vice President, MOL Group Corporate Affairs, Hungary
Steven P. Otillar, Partner, White & Case, UK
F17 – PAPERS

Environmental Regulatory Framework for Offshore Oil & Gas Activities: Analysis of Current Status in Five Geographical Regions

Gabriel Negrelli Garcia, Environmental Consultant, Ramboll Brazil, Brazil

Co-authors: Luisa Leite, Ramboll Brazil, Brazil
Raisa Salvi, Ramboll Brazil, Brazil
Eugenio Singer, Ramboll Brazil, Brazil
Sergio Sahlit, Ramboll Brazil, Brazil
Dan McClary, Ramboll New Zealand, New Zealand
Pieter Booth, Ramboll US, USA
Richard Wenning, Ramboll

The Climate and Economic Penalties of the IMO 2020 Sulfur Regulation

Dr. Hassan El-Houjeiri, Climate and Sustainability Group Leader, Aramco Services Company, USA

Co-authors: Hassan ElHoujeiri, Aramco Services Company, USA
JeanChristophe Monfort, Aramco Services Company, USA

Gas, Renewables and CCS Must Work Together: An Independent Forecast of the Energy Transition

Hans Kristian Danielsen, Vice President, DNVGL, Norway

Co-author: Liv Hovem, DNVGL, Norway

F17 – POSTERS

What to Expect from the East Med Gas Potential up to 2050 and Later?

Oguzhan Akyener, President, Turkey Energy Strategies and Politics Research Center, Turkey

Energy Consumption in India: Is There a Transition or Accumulation?

Dr. Debesh Patra, Chief General Manager, Bharat Petroleum Corporation, India

Environmental Trilemma of Oil and Gas Companies: Compliance, Digital Transformation and HSE

Claudia Valdés, Auditor Jr, Cepsa, Spain
Increasingly efficient transport systems are making the most of digital technologies, smart pricing and changes in consumer behaviour as environmental policies accelerate the move towards lower emission transport modes. The Paris Agreement and IMO’s sulphur cap are leading to a growth of low carbon solutions for land, sea and air transport including advanced biofuels, fuel cells and hydrogen, while technical innovations continue to improve fuel quality and energy efficiency of the internal combustion engine. What are the technologies, strategies and regulations driving this process and how can the petroleum industry address them to stay competitive?
F18 – PAPERS

Transportation Future

Hector Perea, Strategy Vice President, Cepsa, Spain

Pathways Towards Zero Emission Mobility — Perspectives from an Energy Company

Dr. Karsten Wilbrand, Principal Science Expert for Mobility, Shell Global Solutions GmbH, Germany

Co-author: Andreas Kolbeck, Shell Global Solutions GmbH, Germany

New Method for Producing Hydrogen Carrier: Direct MCH for Renewable Energy Use

Dr. Koji Matsuoka, Manager, JXTG Nippon Oil and Energy Corporation, Japan

Co-authors: Sasushi Sato, JXTG Nippon Oil and Energy Corporation, Japan
            Kota Miyoshi, JXTG Nippon Oil and Energy Corporation, Japan
            Hirofumi Takami, JXTG Nippon Oil and Energy Corporation, Japan
            Yoshitatsu Misu, JXTG Nippon Oil and Energy Corporation, Japan
            Tomomi Nagatsuka, JXTG Nippon Oil and Energy Corporation, Japan

Comparison of Fuel Cells Based on Multiple H2 Pathways with Battery & IC Engine

Alok Sharma, Chief General Manager Alternative Energy, Indian Oil Corporation Ltd, India

Co-authors: Sachin Chugh, Indian Oil Corporation Ltd, India
            Chinmay Chaudhari, Indian Oil Corporation Ltd, India
            Tarun Jindal, Indian Oil Corporation Ltd, India
            Amit Katiyar, Indian Oil Corporation Ltd, India
            GS Kapur, Indian Oil Corporation Ltd, India
            SSV Ramaku, Indian Oil Corporation Ltd, India
The Cost of a Low Carbon Transportation Future

**Greg Bean**, Executive Director Gutierrez Energy Management Institute, University of Houston, USA

Co-author: **Norm Whitton**, Electric Interstate Highway Standards Association, USA

Challenges in Deploying and Adopting Electrical Cars

**Hamed Almujaini**, Power System Project Engineer, Petroleum Development, Oman

Co-author: **Aiman Alshukali**, Petroleum Development Oman, Oman

Advancing the Advanced Fuels

**Shailendra Mohite**, Engineer Manufacturing Division, Kuwait Petroleum International, Kuwait

“Yara Birkeland” Zero Emission Feeder

**Knut Glenna**, Project Director, Kongsberg Maritime, Norway

Futuristic Green Hydrogen from Bio-oil: Review of Advanced Bio-fuel Technology and Catalysis

**Dr. Ritesh Mittal**, Senior Manager, Engineers India Ltd, India

Co-authors: **Subimal Jana**, Engineers India Ltd, India
**Ravi Kant Gupta**, Engineers India Ltd, India
**Suresh Chand Gupta**, Engineers India Ltd, India
**Vartika Shukla**, Engineers India Ltd, India

Research on Synergetic Development of Automotive Energy Industry from the Perspective of Multi-Energy Complementary

**Jianping Zhang**, Director, Research Institute of Natural Gas Economy Southwest Oil and Gas Field Company, China

Co-authors: **Fuping Wang**, Research Institute of Natural Gas Economy Southwest Oil and Gasfield Company, China
**Yun Gao**, Research Institute of Natural Gas Economy Southwest Oil and Gasfield Company, China
**Zhongke Hu**, Yunnan Project Team of Huayou Company Southwest Oil and Gasfield Company, China
Rational Electrode Materials Design for Lithium Ion Battery: Renewable Storage and EV Application

Dr. Malay Pramanik, Scientific Officer, Hindustan Petroleum Corporation Ltd, India

Co-author: K Narayanan, Hindustan Petroleum Corporation Ltd, India  
B Ramachnadra Rao, Hindustan Petroleum Corporation Ltd, India

Heterogeneous Transesterification of Camelina Sativa Oil to Prepare Biodiesel

Miroslava Malisova, PhD Student, Faculty of Chemical and Food Technology Slovak Technical University in Bratislava, Slovakia (Slovak Republic)

Co-authors: Michal Hornacek, Faculty of Chemical and Food Technology Slovak Technical University in Bratislava, Slovakia (Slovak Republic)  
Jozef Mikulec, VURUP, Slovakia (Slovak Republic)

Impact of Hydrous Ethanol-Gasoline Blends with Synthesis Gas on Nox Emission and Fuel Consumption

Dr. Ahmed Alharbi, Director, King Abdulaziz City for Science and Technology, Saudi Arabia

Co-authors: Abdullah Alkhedhair, King Abdulaziz City for Science and Technology, Saudi Arabia  
Abdullah Alabduly, King Abdulaziz City for Science and Technology, Saudi Arabia  
Miqad Albishi, King Abdulaziz City for Science and Technology, Saudi Arabia  
Mohammed Almor, King Abdulaziz City for Science and Technology, Saudi Arabia

RT10 – APPROACHES TO IMPLEMENTING CLIMATE CHANGE POLICIES

Monday, December 7, 2020 | 16:00 – 17:30

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.

Moderator:  **Julien Perez**, Strategy & Policy Director, Oil and Gas Climate Initiative, UK

---

### RT11 – HOW DOES GEOPOLITICS IMPACT FUTURE ENERGY DEVELOPMENTS?

**Tuesday, December 8, 2020 | 14:15 – 15:45**

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?

Moderator:  **Charlene Johnson**, CEO, Noia, Canada

---

### RT12 – ENERGY MIX OF THE FUTURE

**Thursday, December 10, 2020 | 14:15 – 15:45**

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?

Moderator:  **Eirik Wærness**, Senior Vice President and Chief Economist, Equinor, Norway
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 faces 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 license 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.

As a society, we need to take risks to grow and develop. Oil and gas companies require detailed assessment of risks and uncertainties and the development of practical strategies for risk minimization or mitigation to achieve their objectives. They are dependent on quality data and robust workflow processes and need to have reliable procedures in place to identify, evaluate and address the broad variety of risks inherent in the oil and gas industry, including subsurface risks, project risks, geopolitical risks, economic risks, cyber risks, financial risks, and regulatory changes, as well as continuously monitoring HSE, societal and reputational risk factors. Best practices and strategies for successful risk management as part of a good governance approach will be discussed and presented in this forum.
Chair: **Eyvind Aven**, Sr Advisor Risk Management, CFO Corporate Risk, Equinor, Norway

Vice Chairs: **Reynold Tetzlaff**, PwC Canada National Energy Leader and Calgary Office Managing Partner, PWC, Canada
**Khalid Al Harbi**, Chief Information Security Officer, Information Security Department, Saudi Aramco, Saudi Arabia

### F19 – PAPERS

**Oil in the Long Term**

**Dr. Abhishek Deshpande**, Global Head of Oil Market Research, JP Morgan, USA

**Leveraging Security Analytics to Mitigate the Risk of Cyberattacks on Oil & Gas Infrastructure**

**Leo Simonovich**, Vice President and Global Head Industrial Cyber and Digital Security, Siemens, USA

**A Sustainable Enterprise Risk Management Program for Oil and Gas Companies**

**Dr. Iqbal Noor**, ERM Specialist, Saudi Aramco, Saudi Arabia

Co-author: **Noora Alfayez**, Saudi Aramco, Saudi Arabia

**Making Sense of Causation Complexity in Capital Projects — Findings from Global Research**

**Toby Hunt**, Partner, HKA Global Ltd, UK

### F19 – POSTERS

**Role of Trust in Mega Oil and Gas Project Risk Management**

**Maryam Sohrabi**, Senior Energy Analyst, IIES, Austria

Co-author: **Erfan Vafaie Fard**, IIES, Iran

**Design Integrity & Plant Assessment (DIPA) — A Methodology to Sustain Operation Excellence & Risk Mitigation**

**Partha Pratim Chaudhury**, Process Engineer, Saudi Aramco, Saudi Arabia

Co-author: **Wasim Arshad**, Saudi Aramco, Saudi Arabia
Modelling of Integrated Complex Offshore Network to Mitigate Uncertainties and Minimize Risk for Hydrocarbon Evacuation

Sukrut Kulkarni, Executive Network Simulation Gas, Petronas, Malaysia
Co-author: Masnizah Supu, Petronas, Malaysia

Developing a Robust Risk Management Framework by Integrating Material Concerns with Business Risks

Keshav Singhal, Manager-Sustainability, Hindustan Petroleum Corporation Ltd, India
Co-author: Zakir H Molla, Hindustan Petroleum Corporation Ltd, India

The “Black Gold”: Battle to Defend the Most Treasured Assets in World

Anas Faruqui, CyberSecurity, Aramco, Saudi Arabia
Co-author: Abdulatif Rushaid, Saudi Aramco, Saudi Arabia

Petroleum Hydrocarbon Contamination Investigation and Risk Assessment of an Abandoned Refinery Site and Countermeasure Research

Chen Changzhao, Engineer, Research Institute of Safety and Environmental Technology of CNPC, China
Co-authors: Quanwei Song, Research Institute of Safety and Environmental Technology of CNPC, China
Xingchun Li, Research Institute of Safety and Environmental Technology of CNPC, China
Jiacai Xie, Research Institute of Safety and Environmental Technology of CNPC, China

The Study of Risk Analysis and Countermeasure on Overseas Petroleum Companies’ Upstream Project

Lianmin Li, Senior Engineer, CNPC, China
Co-author: Taotao Yue, CNPC, China

Quantification and Efficient Mitigation of Risks at Large Oil and Gas Facilities

Dr. Onder Akinci, Senior Civil Engineer, NextDecade LNG, USA
Co-authors: Hyun-Su Kim, Houston Offshore Engineering, USA
Krishna Parvathaneni, Suncor, Canada
Michael Stahl, Atkins, USA
Digital Process Safety and Operations Management Solutions  
Ibrahim AlJahwari, Industrial Engineer and Solutions Architect, Saudi Aramco Process and Control Systems Department, Saudi Arabia  
Co-author: Shual AlHamra, Saudi Aramco Process and Control Systems Department, Saudi Arabia

Management of Future Mega-Risks in Oil and Gas  
Greg Bean, Executive Director Gutierrez Energy Management Institute, University of Houston, USA  
Co-author: Chris Ross, University of Houston, USA

F20 – ACCELERATING ENERGY ACCESS

Tuesday, December 8, 2020 | 14:15 – 15:45

Ten years before the UN’s deadline to provide everyone with access to electricity and clean cooking facilities, we will assess global energy poverty alleviation initiatives and share best practices for tailor-made programs across the world. With multi-stakeholder approaches, new financing solutions and partnerships between countries, energy providers and NGOs, the energy access challenges are a great stimulus for innovative energy solutions. How can companies embed energy access into their strategy? How can they leverage their capabilities, technology and innovation leadership to develop new business models to provide energy access for all? And how can we maximize these strategies to create sustainable benefits for the communities?

Chair: Ivan Marten, Senior Partner, Emeritus, BCG, Spain  
Vice Chairs: Daniel Domeracki, Vice President, Government and Industry Relations, Schlumberger, France  
Faris Hasan, Director of Strategic Planning & Economic Services, OFID, Austria

F20 – PAPERS

Project Ujjwala (PMUY) — Access to Clean Fuel (LPG) by Masses  
Mr. Eshu, Senior Manager, Bharat Petroleum Corporation Ltd, India
Promoting Energy Poverty Alleviation Initiatives in Peru from Petroleum Industry

Cecilia Fernandez Canchos, Adviser, Petroperu, Peru

Eradicating Energy Poverty — Efforts of Indian Hydrocarbon Sector Towards Achieving United Nations Sustainable Development Goals

Amanpreet Singh Chopra, Deputy General Manager, Engineers India Ltd, India

Increasing Energy Access in the Developing World — A Data Driven Approach

Mansoor Hamayun, CEO, BBOXX, UK

Geospatial Electrification Planning for the Achievement of SDG7: An OnSSET-based Case Study for Nigeria

Dr. Salisu Mukhtar, Technical Assistant to the Managing Director PPMC, Nigerian National Petroleum Corporation, Nigeria

Co-authors: Uduak Alpan, SPIDER Solution Nigeria Ltd, Nigeria


Dr. Ritesh Mittal, Senior Manager, Engineers India Ltd, India

Co-authors: Subimal Jana, Engineers India Ltd, India
Ravikant Gupta, Engineers India Ltd, India
Suresh Chand Gupta, Engineers India Ltd, India
Vartika Shukla, Engineers India Ltd, India

How Oil and Gas Can Ensure the Energy Access: Making Profit by Bringing Impact

Dr. Anna Illarionova, WPC YP Representative Russia, WPC Russian National Committee, Russia

Leveraging Predictive Analytics to Inform Strategic Development of Petroleum Distribution Infrastructure in Nigeria

Ade Agbonyin, PhD Researcher, University of Sheffield, UK

Co-author: Oruaro Ogbo, PwC, UK
F21 – DIGITALIZATION OF THE PETROLEUM INDUSTRY: OPPORTUNITIES AND IMPACTS

Tuesday, December 8, 2020 | 16:00 – 17:00

Digital technologies have a significant role in improving efficiency and performance, leveraging innovation, transforming operations and increasing profitability, as well as providing consumer benefits. Artificial intelligence, big data, blockchain, the Internet of Things, 3-D seismic, linear program modelling and advanced process control for operations etc, boost organisations’ performance higher, faster, and to a greater scale than has previously been possible. This forum will present innovative developments in digitalization and their challenges, opportunities and impacts for the oil and gas sector. What are the next big milestones and how can we get there safely and securely?

Chair: Torbjørn Folgerø, SVP & Chief Digital Officer, Equinor ASA, Norway
Vice Chairs: Jacquelyn Niccum, Process Engineering Unit Manager, Chevron Corporation – Energy Technology Company, USA
Alexander Boekhorst, VP Digitalisation and Computational Technology at Shell, Shell Projects & Technology, Netherlands

F21 – PAPERS

Big Industry, Big Data, Big Impact: How a Data Foundation Transforms the Way We Work

Dr. John Markus Lervik, Founder and CEO, Cognite, Norway
Co-author: Carl Fredrik, Cognite, Norway

New Developments in Natural Language Processing to Foster Knowledge Transfer

Dr. Annie Audibert-Hayet, Corporate Technology Group General Secretary, Total SA, France
Co-authors: Pierre Jallais, Total SA, France
Fabrice Leclercq, Total RC, France
JeanChristophe Courcol, Total RC, France

Computer Vision for Real-time ESP Failure Detection and Diagnostics

Rafael Lastra, Engineering Consultant, Saudi Aramco, Saudi Arabia
Application of Digital and Computational Technologies to Material Property Characterization

Dr. Faruk Alpak, Principal Research Reservoir Engineer, Shell International Exploration and Production, USA

Co-authors: Nishank Saxena, Shell International Exploration and Production Inc, USA
Majeed Shaik, Shell India Markets Pvt Ltd, India
Kunj Tandon, Shell India Markets Pvt Ltd, India
Justin Freeman, Shell International Exploration and Production Inc, USA

Development of Abnormality-detection Techniques Aimed at Safety Operations in a Refinery

Haruhisa Goto, Principal Researcher, JXTG Nippon Oil Energy Corporation, Japan

Co-authors: Nobuyuki Ishii, JXTG Nippn Oil Energy Corporation, Japan
Kanji Seike, JXTG Nippon Oil Energy Corporation, Japan

Implementation of Artificial Intelligence to Localize Residual Recoverable Reserves

Farid Khazipov, Head of Department, TATNEFT, Russia

Co-authors: Renal Kashapov, PJSC TATNEFT, Russia
Liaisan Khazipova, PJSC TATNEFT, Russia

Case Study: Predicting Production-impacting Events on Remote Platforms

Philippe Herve, VP Solutions, Spark Cognition, USA

Digital Modernization of Arctic Gas Fields

Nikolai Eremin, Deputy Director, Federal State Budgetary Institution of Science Oil and Gas Research Institute of Russian Academy of Sciences, Russia

Co-authors: Anatoly Dmitrievsky, Federal State Budgetary Institution of Science Oil and Gas Research Institute of Russian Academy of Sciences, Russia
Vladimir Stolyarov, Federal State Budgetary Institution of Science Oil and Gas Research Institute of Russian Academy of Sciences, Russia

The Shale Revolution Next Frontier: Enabling a Digital Twin for Every Well

Joseph Ayoub, Exploration and Production Software Consultant, Emerson Automation Solutions, USA

Co-authors: Jose Jimenez, Emerson Automation Solutions, USA
Michael Thambynayagam, Emerson Automation Solutions, USA
F22 – IMPROVING THE PUBLIC PERCEPTION OF THE OIL AND GAS INDUSTRY

Wednesday, December 9, 2020 | 14:15 – 15:45

In a continuously changing industry and business environment, we need to consistently review public awareness and our sector’s reputation. To effectively sustain its role to produce and deliver hydrocarbons to all, our industry has to improve its credibility. New strategies and communication tools are required to reflect the industry’s key role in society, its safety culture, environmental awareness and ethical values, as well as creating trust, increasing transparency, compliance and social responsibility. This forum will consider why the public perception of the oil and gas industry is divided, how to address these challenges, and what role stakeholders can play in improving our reputation globally and in the places we operate.

A Machine Learning Approach to Predict Phase Separation in Branching T-Junctions

Thamer Al Olayet, IT Systems Analyst, Saudi Aramco, Saudi Arabia

Co-authors: Mansour Khelifa, Schlumberger, France
Suha Kayum, Saudi Aramco, Saudi Arabia

Impact of Blockchain in the Oil and Gas Industry

Juan Benavente, Industry 40 and Blockchain Expert, CEPSA, Spain

Digital Transformation Through Eight Integrated Power & Process Strategies

Constantine Lau, Global Director Oil and Gas, Schneider Electric, United States Minor Outlying Islands

Pertamina Digital Transformation; a Journey to Increase Competitive Advantage in the Oil and Gas Business

Johan Pranoto, Analyst Upstream Relationship Management, Pertamina, Indonesia

Co-author: Dwi Minarto, Pertamina, Indonesia

Digitalization — A Way of Improved Life in HPCL-Visakh Refinery

Tirupati Naidu A, General Manager, Hindustan Petroleum Corporation Ltd, India

Co-author: Naveen Kumar M, Hindustan Petroleum Corporation Ltd, India
Chair: Dr. Anna Illarionova, WPC YP committee, WPC Russian National Committee, Russia
Vice Chairs: Dr. Cengiz Soylu, Instructor, Middle East Technical University, Turkey
Izeusse Braga, Executive Secretary, ARPEL, Uruguay

---

**F22 – PAPERS**

Is the Oil and Gas Industry Ready to Contribute to Sustainable Energy Transition?

Maria Morgunova, PhD Candidate, KTH Royal institute of Technology, Russia

Co-authors: Katerina Shaton, Molde University College, Norway

Stakeholder Relations and Value Beyond Compliance — A New Paradigm

Andrew Lane, Energy Resources and Industrials Leader Deloitte Africa, Deloitte Africa, South Africa

How the API Standardization Program Helps Improve Public Perception of the Oil and Gas Industry

David Miller, Director, Standards Development, API, USA

Strategy to Improve Public Perception of State Oil and Gas Companies

Zakir H Molla, General Manager Sustainability, Hindustan Petroleum Corporation Ltd, India

What the Oil Industry Can Learn from the Aviation Industry in Having Positive Public Perception

Obaidullah Syed, Reliability Consultant, Saudi Aramco, Saudi Arabia

---

**F22 – POSTERS**

Improving Public Perception of the Gas & Petrochemical Industry
(Case Study: Capital of Iran Energy)

Ali Rahneshin, Commercial Department & Iran National Committee Member, Borzouyeh Petrochemical Complex, Iran

Co-authors: Amin Avazpour, NIOC, Iran
Erfan Hasheminasab, Amirkabir University of Technology, Iran
Advocating Trust Building Measures for a Stronger Today and Tomorrow

Sumit Aggarwal, Manager, Engineers India Ltd, India

Methodological Approach for Creating Positive Public Perception of Oil and Gas Sector

Devesh Narula, Assistant Manager, Hindustan Powerprojects Private Ltd, India
Co-author: Keshav Singhal, Hindustan Petroleum Corporation Ltd, India

The Perception of Students and Young Professionals on the Oil and Gas Industry

Tamara Seres, Secretary General of YPC NNKS and Member of WPC YPC of Serbia, National Petroleum Committee of Serbia and WPC YPC, Serbia
Co-author: Zaid Al Khateeb, KGOC and WPC YPC, Kuwait

Pilot Program for Stakeholder Integration within E&P Shale Gas Developments in Mexico

Oscar Grijalva Meza, OCTG Test Engineer, Institute of Petroleum Engineering TU Clausthal, Germany
Co-author: Adhara Ramirez, Compania Petrolera de Altamira, Mexico

Transforming the Canadian Energy Industry Through Indigenous Partnership and Cross Industry Learning

Gregory John, President, Four Peaks Business Development Ltd, Canada

The Evolution of Women’s Role in the Oil Industry: A Case History from Venezuela

Maria Angela Capello, Consultant I, Kuwait Oil Company, Kuwait
Co-authors: Maria Capello, Kuwait Oil Company, Kuwait
Antonieta Lorente, Ellington Geological Services, USA
Isabel Serrano, Independent, USA
Ana Marin, Independent, Canada

Innovation and Successful Stakeholder Management for the Former Texaco Lockport Refinery

Carri Douglas, Project Manager, Chevron, USA

Commitment to Corporate Social Responsibility by Implementing Flare Gas Recovery System in Farashband Refinery

Amin Avazpour, Aghar Gas Field Production Operation Supervisor, Iranian Central Oil Fields Company, Iran
Oil and gas companies are confronted with three major factors affecting their human resources management: economic uncertainties, an aging workforce and rapid technology evolutions, adding pressure to the technical and managerial skills required to continue delivering innovative energy solutions. Attracting and retaining a wide diversity of talent, building the skillset and proficiencies to remain competitive in the future energy landscape, nurturing an innovative culture and accelerating the knowledge transfer is essential for the sustainable growth of the industry. This forum will showcase the best practices to achieving this goal.

Chair: Abdullah Al Otaibi, Director, HR Policy & Planning Department, Saudi Aramco, Saudi Arabia
Vice Chairs: Vlada Streletskaya, Director, Russian National Committee of WPC, Russia
Jelena Bacic, Head of Thermal Energy Service, NIS Gazprom Neft – Refinery Pancevo, Serbia

### F23 – PAPERS

**Leveraging Augmented Reality, Virtual Reality and AI Technologies to Drive Digital Innovation**

Pavan Kumar Vankadaru, Chief Innovation Officer, RandomTrees LLC, USA
Co-author: Prajay Kamat, AI SOLVE, UK

**New Skills for a New Purpose in Oil and Gas**

Inge Oosterhuis, Senior Management Consulting Executive, Accenture, Netherlands
Co-author: Aleek Datta, Accenture, USA
How to Train Your Engineer for Energy Transition: An Adaptive Approach

Dr. Maxime Schenckery, Director Center for Energy Economics and Management, IFPEN IFP School, France

“Bouncing Back”, Empathic, Creative, Committed—How Resilient People Thrive in the Oil and Gas Industry

Dr. Anna Illarionova, WPC YP Representative Russia, WPC Russian National Committee, Russia

F23 – POSTERS

Knowledge Transfer to Millennials Through Competency Management

Musa B. Akgun, Manager, TPAO, Turkey

Accelerated Competency Transformation for Engineers

Almuhammad Basuni, Process Engineer, SAMREF, Saudi Arabia

SAOO Innovation Incubation — Innovationplus

Ensan Elayoubi, Facilities Planning Consultant, Saudi Aramco, Saudi Arabia

Integrating Development, Energy Efficiency and Innovation Through Lean Six Sigma

Bhanumurthy Maddala, Senior Operations Engineer, Saudi Aramco, Saudi Arabia

Strategic Human Competency Operating Model for Future Carbon Energy Business

Dr. Jagdish Giri, Chief Chemist, Oil and Natural Gas Corporation LTD India, India

Training of Personnel with the Help of Artificial Intelligence

Regina Karimova, HR, TATNEFT, Russia

Co-author: Leasan Khazipova, TATNEFT, Russia

Development of New Generation of Oil and Gas Industry Leaders

Artem Shpakov, Discipline Head, Gazprom Neft Shelf, Russia
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 needs 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.

Moderator: Joaquín Abril-Martorell Hernández, Chief Digital Officer, CEPSA, Spain

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
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 roundtable will discuss the skills and requirements that future managers and employees will need to achieve.

Moderator: Dr Béla Kelemen, Vice President, Centre of Business Excellence, MOL Group, Hungary