



ESF MENA

3rd ENERGY & SUSTAINABILITY FORUM
Decarbonising the Downstream Industry
16–18 October 2023 | Riyadh, Saudi Arabia

HOST SPONSOR



ADVISORY MEETING REPORT

**HELD IN DUBAI ON 17 MAY 2023 &
VIRTUALLY ON 23 MAY 2023**

HOSTED BY EURO PETROLEUM CONSULTANTS

CHAIRMAN

FAHAD ALSHEREHY, VICE PRESIDENT ENERGY EFFICIENCY & CARBON MANAGEMENT, **SABIC**

MODERATOR

HASAN SHAFI, PARTNER – ENERGY, **ARTHUR D. LITTLE**

ADVISORS

IN ATTENDANCE:

MARTHAD S. A. BA'ABBAD, DIVISION HEAD - LOW-CARBON HYDROGEN & POLICY DEVELOPMENT, **ARAMCO**

BRIJESH DHRUVE, CENV, CENG, PMP, SENIOR SUSTAINABILITY SPECIALIST, **ENOC**

DIETER TUPPINGER, ACTING CHIEF OPERATING OFFICER RPI & PLASTICS, **OQ**

KHALIFA AL-MAKHMARI, ACTING VP TECHNICAL SERVICE RPI & PLASTICS OPERATIONS, **OQ**

GABRIELE OMASSI, SENIOR ADVISOR BUSINESS DEVELOPMENT, **OMV REFINING & MARKETING**

GHAZI SHAHIN, MANAGING DIRECTOR – QATAR, **TOTAL ENERGIES**

ROMAIN ROUX, VICE PRESIDENT DECARBONIZATION & CONSULTING, **AXENS**

NATHAN ERGONUL, MANAGING DIRECTOR, **ART HYDROPROCESSING**

PETER PETROV, CO-FOUNDER/DEPUTY CEO, **ANGARA GLOBAL**

RAJ RAJESH, SENIOR BUSINESS DEVELOPMENT MANAGER, **EXXONMOBIL**

NORM GILSDORF, SENIOR VICE PRESIDENT, HONEYWELL GLOBAL HIGH GROWTH REGIONS, **HONEYWELL**

ALICIA EASTMAN, PRESIDENT, **INTERCONTINENTAL ENERGY**

RAJESH SHARMA, GLOBAL DIRECTOR MARKETING OIL & GAS DIGITAL SOLUTIONS, **SCHNEIDER ELECTRIC**

ANNE-SOPHIE AMIOT, VICE PRESIDENT, BUSINESS GROWTH PLANNING PROCESS & CHEMICALS, PROJECTS, **WOOD**

EURO PETROLEUM CONSULTANTS

COLIN CHAPMAN, PRESIDENT

MIRO CAVKOV, TECHNICAL DIRECTOR – DOWNSTREAM & ENERGY

APOLOGIES

HALEEMA ALAMRI, DIRECTOR, MINISTRY OF ENERGY, **SAUDI ARABIA**

MOHAMED ABDELSALAM MOHAMED, VICE PRESIDENT OF PRODUCTION SECTOR, **ABU QIR FERTILIZERS CO.**

ROBIN MILLS, CEO, **QAMAR ENERGY**

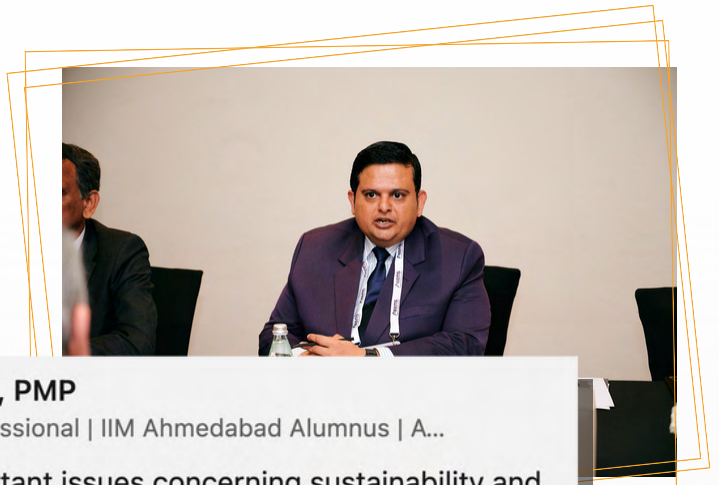
INTRODUCTION

In the rapidly evolving energy transition, Euro Petroleum Consultants (EPC) once again demonstrated its vital role as the connecting link between the downstream industry and its stakeholders.

EPC successfully brought together regional producers and global technology players through two sets of advisory meetings. The first meeting took place on-site during ME-TECH 2023, Middle East Technology Forum for Refining & Petrochemicals, in Dubai, while the second meeting was conducted virtually, offering flexibility and the opportunity to gather additional opinions from key industry influencers.

Both meetings were expertly led by Dr. Hasan Shafi, Partner - Energy at Arthur D. Little. They focused on crucial and urgent topics, including global and regional industry perspectives, the deployment and implementation of greener technologies, and addressing funding challenges, capability development, and ecosystem establishment in the context of the energy transition.

The primary objective was to ensure that the next generation of engineering talents is attracted to and retained in this transformative journey.




Brijesh Dhruve, CEnv, CEng, PMP

GRI Certified Sustainability Professional | IIM Ahmedabad Alumnus | A...

It was great to discuss important issues concerning sustainability and climate change with a group of like-minded peers. **Hasan Shafi** moderated the session swiftly and effectively, which resulted in positive outcomes. I am looking forward to meeting the team in Riyadh in October 2023. Thank you **Alia** for the opportunit ...see more





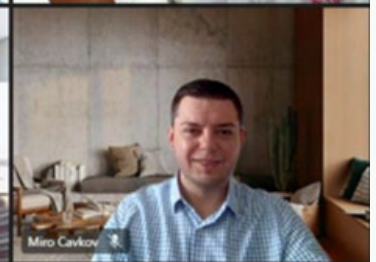






ESF MENA
3rd ENERGY & SUSTAINABILITY FORUM
16-18 October 2023 | Riyadh, Saudi Arabia

ADVISORY COMMITTEE PART II

 <p><small>feeri</small></p>	 <p><small>Hanan Shafi</small></p>	 <p><small>Gilsdorf, Norman L.</small></p>	 <p><small>FAHAD AL SHEREHY (Guest)</small></p>
 <p><small>Alicia Eastman</small></p>	 <p><small>ROUX Romain</small></p>	 <p><small>Amiot, AnneSophie</small></p>	 <p><small>Miro Cavkov</small></p>

europetro.com/esfmena

GLOBAL AND REGIONAL PERSPECTIVES

When considering the impact of climate change, our advisors emphasized that the region possesses unique advantages that can greatly contribute to accelerating the pace of decarbonization. They believe that the downstream industry will continue to be a crucial provider of clean and affordable energy. These advantages are primarily derived from the region's geographic location, the abundance of natural hydrocarbon resources, and renewable energy sources such as wind and solar power. These factors will play a vital role in the Energy Transition (ET), boasting impressive key performance indicators (KPIs) and available capital.

Given the immeasurable costs and efforts associated with the transition, collaborations will be essential for achieving climate targets. Regardless of the size and wealth of individual companies, no single entity will be able to tackle the magnitude of what lies ahead. While the future remains uncertain and unpredictable, the industry can enhance its preparedness for various scenarios it may encounter. By joining forces, innovating, and implementing solutions, significant strides can be made. This collaborative approach is already taking shape through numerous operating joint ventures, which ensure commitment from all involved parties while mitigating market risks.

Regional producers are currently undergoing asset and mindset restructuring, heavily investing in expanding and optimizing their existing assets. By embracing evolving technologies within these assets, a substantial reduction in carbon footprint can be achieved. The value of natural hydrocarbons has been reimaged, generating robust margins even in a long-term declining market. These strong margins will support the development of future capital necessary to sustain transition efforts.

During the meetings, several regional disadvantages were discussed. The first one highlighted was the lack of a common and stable regulatory policy landscape, hindering the industry's unified development. Currently, each producing company sets its own targets and commitments for 2030, 2040, and 2050, aiming to accelerate its transformation efforts. However, the pace of progress varies across facilities, and the absence of a shared policy framework remains a significant challenge.



Anne-Sophie Amiot

Vice President, Business Growth Planning, Process & Chemicals

A lot of good topics touched upon today during our Advisory Committee, with both a strong desire to identify successful pathways to embrace the energy transition along with the courage to recognise challenges ahead of us to make it happen!

Thanks for the discussion, [Hasan Shafi](#), [Euro Petroleum](#) (...see more

Unclear policies and directions create a need for incentives to align the objectives of all involved parties and safeguard the ongoing multi-billion investments. Nonetheless, the lack of regional regulations also presents an opportunity for mega-projects to proceed. While this is the present state in the region, external regulations, such as the EU's Carbon Border Adjustment Mechanism (CBAM), will impact local production and exports, leading to enhanced carbon management regulations.

It was discussed that the transition speed may need to be adjusted to ensure that specific targets and milestones are met by each company individually.

The second disadvantage addressed during the meetings was the limited availability of biogenic feedstock and waste in the region, particularly in relation to the growing significance of Sustainable Aviation Fuel (SAF) on a global scale. However, the advisors compensated for this drawback by mentioning another emerging mega-trend known as Power-to-Liquids (PtL) technology. The region boasts an extremely low Levelized Cost of Electricity (LCOE), providing an opportunity for producers to generate clean and renewable synthetic fuels and chemicals. In terms of mobility, synthetic fuels powering hybrid powertrains are seen as the most efficient way to facilitate comfortable long-range travel.

During the ESF MENA KSA 2023 advisory meeting, the topic of Hydrogen was extensively discussed, emphasizing that Green Hydrogen will serve as a significant lever rather than a one-size-fits-all solution for renewable energy challenges. It is clear that Green Hydrogen has the potential to balance specific processes. For instance, PtL (Power-to-Liquids) through the Fischer-Tropsch route requires Hydrogen, while grey CO₂ remains an abundant resource. Hydrogen can also serve as a balancing battery in renewable energy scenarios where solar and wind installations are interconnected. When there is an imbalance between solar energy during the day and strong winds at night, Hydrogen can be utilized in fuel-cell configurations to meet renewable electricity demand.



However, current electrolysis processes have yet to be scaled up to certain levels. Nevertheless, the anticipated availability of renewable energy will create new opportunities for collaborations that were not previously feasible, allowing for the utilization of blue hydrogen until green hydrogen becomes more widely accessible. The advisory meeting also addressed the critical issue of water scarcity, as water serves as a crucial resource for producing green hydrogen.

The first section of the advisory meeting raised an important question: Are we truly comprehending the magnitude of the energy transition and who will bear the ultimate cost?

GREENER TECHNOLOGY DEPLOYMENT AND IMPLEMENTATION

The discussion then delved into technology-related questions, highlighting some of the industry's most pressing topics and challenges that must be overcome in the coming years.

Decades of technological advancements are now yielding results as they are being implemented, offering greater production flexibility compared to previous eras. Traditional refinery assets are undergoing repurposing and reinvention to align with new and upcoming scenarios. A shift in mindset is necessary, and this change is already underway and gaining momentum.

The discussion further explored the fact that many companies lack the necessary processes to adopt new technologies and lack Key Performance Indicators (KPIs) aimed at reducing carbon emissions from production units. As a conservative industry, the downstream sector needs to develop new KPIs to embrace new technologies. This involves creating new procedures and adapting to new technology pathways since operators are generally hesitant to try untested or commercially unproven technologies. Advisors commented that conservative refiners currently approach new technologies by testing and retrofitting them into existing older assets. However, this approach hampers the pace of technology deployment, ultimately affecting climate targets. Nevertheless, those companies that are quick to respond and embrace new technologies will reap the initial benefits, leading to a chain reaction where other companies waiting on the sidelines will also benefit from these early successes.



Ghazi Shahin

Managing Director Refining and Chemicals - Q...

Many thanks for the good facilitation by Hasan and Colin. We had rich conversation and sharing different views on decarbonisation initiatives. Also, good discussion on how the industry needs to tackle the challenges to get there.



Rajesh Sharma

Global Director Strategy, Digital and Energy Transition Solutions

Thank you **Euro Petroleum Consultants** for setting up very engaging and important discussion on **#decarbonisation** which was very well led and managed by **Hasan Shafi**. Looking forward to continued discussion on **#digitalization** and **#electrification** with my colleagues from the meeting.

Continuing the conversation, the discussion turned to digital technologies and emphasized the need to implement such systems, which will become a compulsory tool on-site. Digital twins were highlighted as unlocking new possibilities and playing a vital role as a frontrunner in the industry. They allow critical processes to be tested in a digital environment before being adapted in the real plant. Valuable visual data was deemed as important as the main feedstock, with the phrase "data is the new oil" reflecting its significance. However, it was mentioned that maintaining a high level of cybersecurity is a major challenge, and the region is considered a leader in this field. As a result, sharing data easily and in a proper manner becomes more difficult, hindering the expansion and implementation of advanced digital technologies. Ensuring data accuracy is crucial for enabling predictive maintenance, predictive operations, precise Advanced Process Control (APC) settings, and more. Sustainable digital platforms will become increasingly complex but will provide greater flexibility to navigate various scenarios, enabling the identification of losses and their sources.

The discussion then shifted to Carbon Capture and Storage (CCS) technology, which was seen as promising and a necessity for carbon-intensive industries. However, the advisors pointed out that implementing CCS comes with its pros and cons. While capturing CO₂ from conventional processes and transforming it from grey to blue to make it environmentally friendly sounds appealing and straightforward, the reality is often different. Building carbon capture facilities requires significant capital expenditure (CAPEX), and they are expensive to operate. Additionally, the scalability of these facilities is still limited, leading to delays in the implementation of real blue products such as hydrogen.

When it comes to emissions, green electricity will play a crucial role in the decarbonization journey. However, this raises several questions, such as the source of production and how producers can ensure a reliable supply of green electricity. Furthermore, the entire industry value chain needs to be restructured to enable companies to focus on advancements in the automotive and fuel production sectors.

Producing companies are currently making substantial investments, dedicating billions of dollars to develop low-carbon solutions, as these are viewed as integrated power systems. Energy efficiency stands out as one of the central tools for decarbonization, allowing waste heat to be utilized for electricity generation. As an example, it has been demonstrated that a \$1 billion investment in optimization can pay for itself within just two years. Additionally, optimizing refinery fuel consumption is a fundamental approach to reducing process heat emissions.

Technology solutions and configurations are already available, and approaches are becoming clearer. The key now is to scale up these solutions to meet the industry's demands.

SECURING ENERGY TRANSITION FUNDING

Securing funding for energy transition projects was acknowledged by the advisors as one of the most critical aspects of project delivery. The question of when projects trigger the need for funding and what companies should do to attract funding was raised.

An advisor emphasized the importance of dedicated business plans for energy transition projects that are evaluated annually, especially when aiming to secure state funding. It is crucial to identify the right funding model. For instance, state funds typically support state projects, but governments can also expand their role and support private projects through joint ventures. Funding for projects should be based on technology feasibility.

Furthermore, it was expressed that the world is committed to a significant decarbonization effort, with every company nowadays having its sustainability goals. However, it is now imperative for all parties involved to collaborate more closely. It was acknowledged that individual players may not be able to fully achieve their targets unless there is collective effort and cooperation among all stakeholders.



Alicia Eastman

President & Co-founder InterContinental Energy, Wharton School of E...

An honor to take part and I think we all agreed that partnerships are key!



*Individual players
may not be able to fully
achieve their targets
unless there is collective
effort and cooperation
among all stakeholders*



CAPABILITY BUILDING AND ECOSYSTEM DEVELOPMENT

After discussing the first three sections of the advisory agenda, the advisors delved into a topic that has been considered crucial yet often underestimated for quite some time: How can energy companies, both suppliers and producers, attract young and diverse engineering talents to support and steer the energy transition journey in the right direction?

The advisors emphasized the importance of lateral thinking from senior professionals, as it can greatly benefit the younger generation by facilitating knowledge sharing and fostering connections. The oil, gas, and energy industry, including the downstream segment, has been negatively portrayed for an extended period, leading to a decline in interest among aspiring chemical engineers. To address this issue, there must be a shift in the industry's mindset and approach, presenting it as an attractive field for professional development.



Looking ahead to the next few decades, as energy transition assets are developed, the question arises: Who will be responsible for running and maintaining these assets in optimal production condition? It was noted that reducing the workforce is not conducive to the overall situation. Instead, companies must recognize the value of new talent and invest in their development by creating a nurturing environment where they can thrive.

Capabilities for attracting and retaining talent are not uniformly developed across companies, but the Middle East region undoubtedly holds its own advantages. However, companies alone do not possess all the necessary resources to tackle this challenge.

Companies must recognise the value of new talent and invest in their development by creating a nurturing environment where they can thrive

An illustrative example comes from Saudi Arabia, where policies, approaches, and techniques for attracting and retaining have been implemented starting from educational institutions. The legacy and modern engineering practices will begin to diversify, and the new generation of engineers will be digitally inclined. They may struggle to grasp how the industry and the world have transformed. For instance, calculations in today's context are different, as digital tools have simplified the evaluation of refinery data.

The ESF MENA KSA 2023 event aims to address these critical issues by providing a platform for dialogue, and showcasing contextual visions, technology adoption, funding strategies, and capabilities needed to attract the new generation of engineers.



ESF MENA

3rd ENERGY & SUSTAINABILITY FORUM
Decarbonising the Downstream Industry
16–18 October 2023 | Riyadh, Saudi Arabia

HOST SPONSOR

سابك
sabic

CALL FOR PAPERS

Join our Esteemed Speaker Panel

Speaking slots are available for companies who provide technologies and services in the following areas:

- Decarbonisation Strategies and Deployment
- Digitally Driving Decarbonisation
- Renewable & Sustainable Fuels
- Circularity & Sustainable Chemical Catalyst & Feedstocks
- Hydrogen & CCUS
- Energy & Operational Efficiency

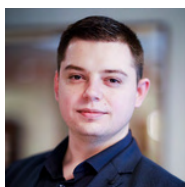
Submit Your Abstract



Maryanne Morris

Conference Director

maryanne@europetro-me.com



Miro Cavkov

Technical Director - Downstream & Energy

miro_cavkov@europetro.com



events@europetro-me.com



+971 (0)4 421 46 42



europetro.com/esfmena

