

CEO ROUND- TABLE SERIES

Abdullah Bin Hamad
Al-Attiyah International
Foundation for Energy
& Sustainable Development





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3m

AGENDA

Thursday, 27th June 2019
St Regis Hotel
Doha, Qatar

10:00 AM	Coffee and Networking
10:25 AM	Welcome and Opening
10:40 AM	Special Guest Speakers
11:00 AM	Moderated Roundtable Discussion
12:00 PM	Closing Comments
12:15 PM	Networking Lunch



CEO Roundtable Series

His Excellency Abdullah Bin Hamad Al-Attiyah, Chairman of the Al-Attiyah Foundation, launched the CEO Roundtable Series and Dialogues to provide a platform for knowledge exchange and support for the global community in the quest towards a sustainable energy future. All guests have the opportunity to share their opinions and insights in what is always a lively and thought-provoking discussion.

** The series of events take place under the Chatham House Rule and will not be attributed to any individual.*



THEME

Petrochemicals – Changing Trends in Refineries

Refineries and petrochemical plants both process hydrocarbon derived materials. Refineries focus on fuels production and products including LPG (liquefied petroleum gas), naphtha, gasoline (petrol), kerosene, jet fuels, diesel, gas oils, fuel oils, and petroleum coke. The main refinery processes involved are distillation, cracking heavier distillate production into lighter products and changing molecule structures (reforming). It is the naphtha that refineries produce that primarily goes into petrochemicals but its main use currently is to produce gasoline.

Petrochemical plants focus on creating intermediates used to produce industrial and consumer products. Major petrochemical processes include:

- Steam cracking of naphtha, ethane or LPG's to produce ethylene, propylene and butadiene. These petrochemical intermediates are the basic building blocks of a great part of the petrochemical industry and lead to the production of polyethylene (plastic bags and sheet), polyvinyl chloride (pipes and window frames and polypropylene (for synthetic fibres) to name just a few products;
- Aromatic extraction - this process extracts benzene, toluene and xylenes from refinery reforming process and from steam cracking. Benzene is a widely used industrial chemical. Benzene is found in crude oil and is a major part of gasoline, synthetic fibers, lubricants, dyes, detergents, drugs and pesticides. Toluene has numerous commercial and industrial applications and is a solvent in paints, lacquers, thinners, glues, correction fluid and nail polish remover, and is used in the printing and leather tanning processes. Xylene is used in the production of terephthalic acid monomer. Which is used to manufacture PET bottles and polyester fabrics;
- Production of ammonia and methanol - a specific use of methane from natural gas is the source of fuel and feedstock for production of both ammonia and methanol. Hydrocarbons react with the water to produce carbon monoxide, carbon dioxide, and hydrogen. The effluent then passes to the secondary reformer. Ammonia and Methanol are petrochemical intermediates in the production of urea which is used as a Fertiliser and melamine which is a high-quality plastic.

KEY QUESTIONS

- What does the future look like, in terms of demand for petrochemical and refinery products?
- What is the current status of refinery building and how is the trend in design changing?
- What are the essential considerations in deciding whether it is appropriate to integrate petrochemical and refinery operations?
- What are the economic, operational and technological challenges associated with integration of petrochemical plants and refineries?
- How is the industry addressing these challenges?
- What innovative approaches are evolving through the effort to continue to add value to petrochemical and refinery products through integration?

DISCUSSION POINTS

The CEO Roundtable provides the opportunity for international experts to share insights on how the integration of petrochemical plants is impacting the changing trends in refineries. The discussion will cover, but not limited to, the following aspects:

- What strategic considerations are involved in making a business case for integration?
- Challenges and opportunities associated with integration into larger composite plants.
- Identifying the opportunities to improve efficiency and continue to add value to refinery operations.
- Identifying and engaging the entire stock of knowledge available globally to achieve continue growth of the petrochemical sector.

MODERATOR



Nawied Jabarkhyl
TV Presenter, Thomson Reuters.

Nawied Jabarkhyl is a TV Presenter and Correspondent at Reuters in London. Having set up operations for Reuters Broadcast Solutions in Dubai, Nawied oversaw live programming and custom content for the team from the Middle East, until returning to the UK in 2018. He has reported on major events including the fallout of the war in Syria, the Formula One Abu Dhabi Grand Prix, and the 2017 Gulf diplomatic crisis. Energy markets were a key focus of Nawied's time in the Middle East, as was the region's growing economic relationship with China. Now based in London, Nawied reports on UK and European news for global TV clients. Fluent in Farsi and with a basic knowledge of Pashto, Nawied was born and raised in London and maintains strong ties to Afghanistan.



KEY MESSAGES

- 1.** Refineries are getting bigger. Margins in refineries have typically been tight, so refinery size has been driven by economies of scale being achieved. Refinery investment does not have a "Straight line" relationship with refinery size on a barrel / day capacity. Furthermore, operating costs have a similar nonlinear relationship - particularly on operator costs. Technology has also improved on control systems and thereby moving the "diseconomies of scale" further to bigger refineries.
- 2.** Margins on petrochemicals appear to be higher and more stable than for refined products.
- 3.** Transportation fuels are the heart of most refineries' product slate. The demand for refined products appears to be muted by trends towards increased fuel efficiency and electrification of vehicles. On the other hand, the demand for most petrochemicals appears to be growing, driven by population and wealth increases.
- 4.** Refineries have to be flexible in determining which crudes they use so that they can take advantage of "awkward" crudes or distressed cargoes.
- 5.** Energy efficiency and lower overall investment costs (say on pipelines, tankage and logistics) seems to be driving a trend toward integrated petrochemical refineries.



SPECIAL GUEST SPEAKERS



Dr. Andrew Spiers

Senior Vice President, Nexant Energy & Chemicals Advisory International.

Project executive on major Middle East and Asian industry consulting assignments. Extensive experience of chemical industry fundamentals and economics. Consulted in many countries throughout Europe, Middle East and Asia. Has carried out a wide variety of projects covering petrochemicals, polymers and gas-based chemicals. Led Petrochemical-Refinery integration and feasibility studies in various ME countries and Asian countries. Led global M&A due diligence activity for a major diversified chemical company. Prepared National Petrochemical Masterplans for various countries including Egypt, Thailand, Malaysia and Kazakhstan. Undertook operational benchmarking and business valuation of an integrated petrochemical producer in India.



Alan Gelder

*VP Refining, Chemicals and Oil Markets
Wood Mackenzie.*

Alan is VP Refining, Chemicals and Oil Markets. As Downstream Global Content Lead, he is responsible for formulating Wood Mackenzie's research outlook and integrated cross-sector perspectives on this global sector. Alan has extensive experience in oil, refining and commodity chemicals, providing outlooks on market developments, asset competitiveness and the key drivers for long term viability. Prior to joining Wood Mackenzie, Alan had 10 years of industry consulting, largely focused on project techno-economics and project financing.

Alan has a first-class Master Degree in Chemical Engineering from Imperial College, London, supplemented by an MBA from Henley Management College.



Professor Paul Stevens

Distinguished Fellow in the Energy, Environment and Resources Department, Chatham House.

Paul Stevens is a Distinguished Fellow in the Energy, Environment and Resources Department at Chatham House, the Royal Institute of International Affairs in London. He was educated as an economist and as a specialist on the Middle East at Cambridge and the School of Oriental and African Studies, University of London. From 1973 to 1979 he was an Assistant Professor in Economics at the American University of Beirut in Lebanon. 1979 to 1993 teaching at the University of Surrey. 1993 to 2008 Professor of Petroleum Policy and Economics at CEPMLP, the University of Dundee, Scotland, a chair created by BP.

He is now Professor Emeritus at the University of Dundee. He is also a Distinguished Fellow at the Institute of Energy Economics Japan (IEEJ) in Tokyo. In March 2009 he was presented with the OPEC Award in recognition of his outstanding work in the field of oil and energy research.



Eric Duchesne

Senior Vice President Manufacturing and Projects, Total.

Eric Duchesne began his career in 1991 as a central process engineer on processes for a new plant in Scotland in a joint venture with BP Chemicals. In May 2011, he was appointed GM of the Total Lyon technical Centre. In 2012 he was appointed VP, Technology in the Refining and Chemicals' Manufacturing and Projects Division. In September 2016 he was the Group's Senior VP of Technology Experts. On October 1st, 2018, Eric was appointed Senior Vice President Manufacturing and Projects.

Mr. Duchesne is a graduate of the French engineering school Ecole Polytechnique and of The École Nationale Supérieure des Industries Chimiques (ENSIC).

ABOUT THE FOUNDATION

The Abdullah bin Hamad Al-Attiyah International Foundation for Energy and Sustainable Development is a non-profit think tank providing independent insights, in-depth research and informed debate on energy and sustainable development themes.



THE FOUNDER AND BOARD OF TRUSTEES

The Foundation's Chairman, His Excellency Abdullah Bin Hamad Al-Attiyah's 40 years' experience is unprecedented. Over several decades he held many high-profile positions including Deputy Prime Minister for the State of Qatar, CEO, Qatar Petroleum, and President of OPEC. In addition, His Excellency was elected Chairman of the United Nations Commission on Sustainable Development in 2006 and six years later successfully served as the President of the United Nations Convention on Climate Change, COP 18.

H.E. Al-Attiyah's unique experience gave him first-hand knowledge of the challenges and opportunities faced by the global community in their quest to provide sustainable energy. He hopes the Al-Attiyah Foundation's work can support its members, partners and society with this quest.

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OUR MEMBERS

Currently the Foundation has over fifteen corporate members from Qatar's energy, insurance and banking industries as well as several partnership agreements with business and academia.



OUR PARTNERS

Our partners collaborate with us on various projects and research within the themes of energy and sustainable development.





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